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ORIGINAL CONTRIBUTIONS

THE TREATMENT OF NONTUBERCULOUS PULMONARY SUPPURATION *

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Pulmonary suppuration is an inclusive term for all nonspecific suppurative processes involving the lungs or bronchi. It includes, therefore, not only the pathologically and clinically well-defined cases of pulmonary abscesses and bronchiectasis, but also cases in which these conditions coexist. Suppurative pneumonitis is another pathologic subdivision of a more or less diffuse suppuration, involving a relatively large portion of the lung. Localized gangrene may be a precursor to abscess.

The pathologic anatomy in cases of pulmonary suppuration is varied. An abscess may be small, but surrounded by a relatively wide area of pneumonitis, or large, involving the greater portion of a lobe. It may be multilocular, or there may be multiple discrete abscesses. Bronchiectasis may be localized or diffuse, saccular, globular or tubular. Great variability also exists as to the degree of inflammatory change. Secondary infection of the bronchi from an abscess draining thru them predisposes to bronchiectasis. Ulcerative perforation of the walls of the bronchi, or the spread of infection by way of the lymphatics or the blood stream, may produce secondary abscess. As a result, abscess and bronchiectasis often coexists, and it may be difficult to decide from the pathologic specimen which was primary.

The abscess following tonsillectomy so characteristically leads to a secondary bronchiectasis that Aschner designates it as bronchiectatic abscess. Suppurative pneumonitis, more or less localized, has been described by him as a definite pathologic type of pulmonary suppuration. It would seem probable that cases of abscess of the lung of embolic origin are of this type at the onset. After liquefaction and rupture into a bronchus they take on the characteristics of abscess. I have drained such foci in the lung after failing to find frank pus, and obtained as prompt cessation of symptoms as in cases in which pus was evacuated. Aschner believes that widespread infection of the bronchi, due to aspiration of infected fluids, may lead also to massive suppurative pneumonitis.

DIAGNOSIS

The recognition clinically of these types of pulmonary suppuration, as would naturally be expected, may be difficult or impossible. Given a case in which the findings are fairly typical, there may still be a large element of uncertainty with regard to site and extent of a lesion, or to the presence of secondary complicating lesion of another type. Inasmuch, however, as the treatment of abscess, bronchiectasis and suppurative pneumonitis as such may

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differ radically, their recognition is essential to effective treatment.

Differential diagnosis must be based on the clinical aspects of the case, taking into account especially the mode of onset, the etiology, symptoms and signs, roentgenographic findings and, in certain cases, bronchoscopic findings and clinical course.

In pulmonary abscess the duration is usually a matter of weeks or months only, dating from an acute illness, operation or accident. The onset is abrupt, and characterized by marked symptoms of acute infection with more or less prostration. The onset of cough and sputum may be sudden or gradual. The physical findings may be those of localized consolidation or cavitation, or they may be slight and of uncertain significance. The roentgenogram is of the greatest value in differentiating abscess and bronchiectasis, showing, in case of abscess, a circumscribed area of increased density and in some cases a fluid level.

In cases of long standing, in cases in which the roentgenogram shows multiocular cavitation, and in those in which there is thickening of the pleura, masking physical signs and shadows produced by pulmonary lesions, it may be quite impossible to determine whether abscess or bronchiectasis is the predominating condition, or what is the extent of secondary involvement.

In cases of typical bronchiectasis the onset is often gradual and insidious. There may be a history of an acute infection, or an operation may have been performed, or it may be possible to elicit a history of the patient having inhaled or "swallowed" a foreign body at some time preceding the onset of symptoms. The chief characterizing symptom, and at times the only finding on which a diagnosis may be based, is a chronic cough with a large amount of purulent sputum evacuated at more or less regular intervals and, as Lemon especially has emphasized, at will by gravity. The physical findings are variable. Roentgenograms usually show a fairly normal translucency of the thorax with perhaps slightly increased density of the involved portion, especially if the pus has not been evacuated just prior to making the roentgenogram, or they may show simply an increased density and some dilation of the involved bronchi. In many cases practically nothing abnormal is shown. Bronchoscopy may be necessary in order to exclude the presence of a foreign body, and in some cases to determine the lobe of the lung involved.

Suppurative pneumonitis is probably always an acute process, giving rise to marked symptoms of septic absorption. Embolic infection of the lung following operations, and leading to multiple abscesses, is probably of this type. Aspiration of infected blood, or of gastric contents at operation, such as gives rise to gangrenous bronchopneumonia, if the patient survives long enough, leads to such a condition. Roentgenograms in such cases that have come under my observation show a more or less diffuse shadow; thus localization is uncertain or impossible.

TREATMENT

Pulmonary Abscess. The fundamental principle in the treatment of pulmonary abscess, as of pyogenic abscess anywhere else in the body, is complete drainage. Therefore, any method of treatment, to be fundamentally sound, must secure effective drainage. Practically, the method which, properly applied, restores the greatest proportion of patients to health, is the best method. Not only effective drainage, but operative hazard and postoperative complications must, therefore, receive consideration. Pulmonary abscesses vary greatly, both as to pathologic anatomy and clinically. The treatment should be adapted to the individual case.

Spontaneous perforation of the abscess into a bronchus has occurred in most cases at the time the patient comes under observation, or before diagnosis is made. If the resulting drainage by way of the bronchus is adequate, there is immediate and progressive improvement, and spontaneous cure may result. Postural treatment and, in case of foreign body abscess, removal of the body, and bronchoscopic dilation of the strictural bronchus, may be of great service in promoting drainage. A centrally located abscess discharging into a large bronchus is the most likely to heal spontaneously, and is also the most difficult and hazardous to drain surgically. A peripheral abscess is least likely to drain adequately thru a bronchus, and is most suitable for surgical drainage.

The patient's general condition and the amount and character of the cough and sputum, however, furnish the best indication for treatment. If the patient does not progressively improve, expectant treatment should not be continued for more than three or four weeks. If he has been getting worse, and especially if the cough is incessant and the sputum foul, immediate drainage is indicated. Enlargement of the abscess cavity, multiocular cavitation, and death from aspiration bronchopneumonia, hemorrhage into the cavity, brain abscess, or general sepsis and exhaustion may be the penalty of delay in such cases. If surgical drainage is delayed until the patient's condition becomes critical, there will also be an increased operative mortality, due in large measure to delayed drainage.

It is apparent how a high operative mortality rate thus obtained may be improperly used as an argument for expectant treatment. The results of expectant or postural treatment do not warrant the use of this method except on a tentative basis, as I have indicated. A review of the recent literature indicates that not more than 10 per cent of adults with well defined abscesses get well spontaneously. Conversely, the mortality following expectant treatment only has long been known to be high. Lenhartz, Verneuil, Picot, Kissling, Baron, and others reported it at from 60 to 100 per cent. Operation on those who survive after the abscess has become chronic has also been followed by a mortality more than double that in the acute stage (Eisendrath), and the increase in resulting morbidity is probably in excess of that proportion.

Artificial collapse of the lung by pneumothorax is primarily for the purpose of promoting bronchial drainage, and also healing by allowing the walls of a cavity to collapse. It follows that the opening into a bronchus must be adequate and the abscess walls collapsible, or healing of the abscess cannot reasonably be expected. Centrally situated acute abscesses, and others which on account of adequate bronchial drainage are most favorable for expectant treatment, are, therefore, also most suitable for pneumothorax collapse. When the patient is a very poor risk, or the abscess is multiocular or impossible, to localize, pneumothorax collapse, because of its relative safety, recommends itself as a possible palliative measure.

The use of this method is necessarily limited to cases in which the lung is not adherent, variously reported to be from 50 to 80 per cent. If the abscess is in the parenchyma, the separation of adhesions, or the perforation of the abscess into the pleural cavity after collapse, has been reported to terminate fatally as a result of empyema.

Various results have been reported. Tewksbury, in 1919, reported fourteen cases treated by this method; eleven of the patients were cured and three died. Goldberg and Biesenthal reported sixteen cases, three of their own; 75 per cent of the patients improved and 12 per cent died. Two of Heuer's patients were cured, and three improved. Rist, Weil, de Verbizier and Loiseleur and others reported favorable results in individual cases. The method is not without its dangers. Wessler reported two deaths immediately after a refill.

Drainage by operation is the most satisfactory treatment of pulmonary abscess. It is only in cases in which there is progressive improvement following postural treatment, and in those in which the abscess is inaccessible or unfavorable for drainage, that other methods are to be considered. In simple acute abscess in the parenchyma it has also given by far the best results. Heuer reported twenty-four such cases with 66 per cent of the patients entirely well, and one death (4.2 per cent). Whittemore reported a 5.8 per cent mortality in seventeen cases; Lord, six deaths (9 per cent) in sixty-two cases, and Sauerbruch three deaths (16.3 per cent) in nineteen cases.

Chronic abscesses surrounded by rigid fibrous walls, and especially if multilocular and complicated by a secondary bronchiectasis, are relatively unfavorable to treatment by any method. The mortality following drainage has been 30 to 40 per cent (Perthes, Freyhan, Sauerbruch) and the proportion of complete cures small.

Bronchiectasis. The treatment of bronchiectasis has been attempted on the same general principles as of abscess, but on the whole with very discouraging results. Considering the large proportion of cases in which no surgical measures have been attempted, it may be said that the treatment has been almost entirely postural and expectant. Various degrees of palliation have been obtained but not cure. Bronchoscopic lavage has produced amelioration of symptoms during the time of treatment, but probably no more. The surgical methods that have been used are drainage, lobectomy and collapse therapy.

A consideration of the pathologic anatomy of typical diffuse bronchiectasis would seem a sufficient demonstration on *a priori* grounds of the futility of attempting drainage for the simple reason that all portions of the diseased bronchial tree cannot be drained. Localized saccular bronchiectasis, on the other hand, may be sufficiently well drained to produce at least very marked improvement, so long as drainage is maintained. Probably a large proportion of cases, in which cure or benefit is reported, are of this type.

Drainage has yielded not only a small percentage of cures but a high mortality. Batzdorff, in a series of fifty-three collected cases, reported cure in 9.4 per cent, and death in 62 per cent. Sauerbruch collected 123 cases, in which 33 per cent of the patients were cured, 6 per cent improved, 27 per cent not improved, and 23 per cent dead. In individual series, in which unfavorable results are more likely to be included, the mortality is even higher. Garre lost 37 per cent of such patients immediately after operation, and Körte lost 78.6 per cent. In two cases of localized saccular bronchiectasis which I drained there was marked improvement but not cure.

From the standpoint of the pathologic anatomy, pneumonectomy would seem the operation of choice in bronchiectasis, but the proportion of cures has been small and the operative mortality high. Willy Meyer, in 1914, wrote that up to that time there had been sixteen lobectomies with eight deaths. In 1915, he reported the case of another patient on whom he operated successfully. Robinson, in 1917, reported seven cases with three deaths. Hitzrot had one recovery following operation. Hansen had four cases with one death. Sauerbruch performed a single stage lobectomy on three patients, all of whom died, and on six patients following pulmonary plastic operation (with ligation of pulmonary artery) without a death. Lilienthal reported twenty-one cases; seven of the patients were well; twelve had died, one still had cough and sputum, and one was convalescent. Graham reported three cases with one cure. Of forty-eight cases studied by him only 17 per cent of the patients were cured. The combined mortality of primary lobectomy in a total of fifty-six collected cases is 52 per cent.

Even considering the brilliant results obtained in certain cases, it would seem questionable whether an operation that carries so high a mortality and so low a proportion of cures is justified by its results. It may also be questionable whether some of these cases diagnosed as bronchiectatic abscess were not of the type ordinarily known as acute posttonsillectomy abscess, for which operative drainage has yielded a relatively low mortality. The indications for lobectomy, moreover, according to enthusiastic advocates, have been limited to young adults in good general condition and without damage to other vital organs. This leaves a great many patients for whom other operative measures must be adopted, if they are not to be left to their fate.

Of the various other methods of treatment, extrapleural thoracoplasty seems to offer the most hope. Opinions expressed in the literature as to results of thorocoplasty for nontuberculous pulmonary suppuration have varied greatly. Brauer is quoted to the effect that he has neither observed nor seen reported in literature a genuine case of pulmonary suppuration or bronchiectasis really healed by collapse therapy. Hansen tried the method in two cases without benefit. DeQuervain performed lobectomy in one case following thoracoplasty. Mumford and Robinson lost two patients, and almost lost a third, following this operation.

Many cases of marked improvement and some cures have also been reported. Lenhartz reported two cases of extensive resection; one patient was cured, the other improved. Kuttner had one patient so treated, whose symptoms had not recurred seven months after operation. Luxembourg reported a cure following Friedrich's operation, combined with apical pleurolysis and resection of the clavicle. Three of Lilienthal's patients improved and one died. Davies performed a Wilm's operation in one case. The patient's condition improved greatly; cough and sputum diminished and the sputum was no longer offensive. Zinn and Muhsam reported a case in which decided improvement followed operation. Körte carried out extensive rib resections in three cases. One patient died of brain abscess; in the second the results were uncertain, and the third was completely cured. Sauerbruch reported twenty-seven cases. Five patients were permanently benefited, the others obtained only temporary improvement, one died, and one became worse after a year. In eleven patients with postpneumonia complications there was enduring benefit characterized by diminution in sputum, disappearance of putrid stench and improvement in the general condition.

The imperfect results reported were probably due in part to a failure to perform a sufficiently extensive operation to secure complete collapse, and in part to too extensive an operation being attempted at one sitting. If an extensive operation is performed at one time, the operative mortality may be expected to be high, owing to shock, embarrassed respiration and retained secretions. A graded thoracoplasty may be divided into a number of stages, thus minimizing the shock and allowing the patient to adapt himself by degrees to the disturbance to respiration and circulation. Very extensive resection can eventually be accomplished, and the indication for operation can be extended by making it less hazardous. Experience has shown that certain patients thus treated will improve so much that an approximate cure is obtained, and the hazards of the more radical operation are avoided. If the results are unsatisfactory, lobectomy can be performed, probably with the minimum of operative hazard.

Of other forms of collapse therapy, artificial pneumothorax and ligation of the pulmonary artery to the affected lobe may be mentioned. Because of the markedly beneficial effect of artificial pneumothorax in pulmonary tuberculosis, it was natural that this method should suggest itself as of promise in the treatment of nontuberculous suppuration of the lung. The results, however, in the treatment of bronchiectasis have been disappointing. Small series of cases, in which improvement approximated cure, have been reported. Frank, Weil, Luxembourg and Balboni, have reported isolated cases, in which the patients were either greatly improved or cured. Balboni's patient was symptom-free eight months after the last treatment. Unverricht tried the method in five cases. Adhesions prevented collapse of the lung in one; three of the patients were considered cured eight months, ten months, and one year respectively after treatment. It should be noted that in these cases the symptoms had been present a relatively short time, from one and one-half to two and one-half years. Volhard reported six cases. In three no considerable collapse was achieved; in one, lasting benefit was obtained; and in one, with very complete collapse, the patient seemed cured, but cough and sputum recurred after two and one-half years. Schmidt reported no beneficial effect in eight cases. Artificial pneumothorax has been used in three patients with bronchiectasis at the Mayo Clinic, with marked, but temporary benefit; one patient remained almost symptom-free for five months, and one for more than a year; the third case is too recent to judge as to end-results. The chief limitations of the method seem to be that, in most cases, adhesion or the condition of the lung itself prevents sufficient collapse; in cases in which marked collapse is obtained, prolonged treatment is necessary. Improvement, moreover, does not seem to be permanent. Ligation of the pulmonary artery was found by Sauerbruch to be of benefit only in combination with later thoracoplasty.

Suppurative Pneumonitis. The indeterminate or combined group includes (1) cases in which there is evidence of a combination of abscess and bronchiectasis, (2) cases of multiple abscess, and (3) cases of suppurative pneumonitis. In these groups of cases it may be exceedingly difficult to decide as to the nature and extent of the lesions. The roentgenogram, as a rule, shows a more or less mottled, or uniformly dense shadow, and the physical signs may be equally equivocal. The etiology is of significance in such cases. A history of aspiration of foreign material, or of operation, especially tonsillectomy, or other operation around the mouth under general anesthesia preceding the onset of symptoms constitutes evidence in favor of an abscess, to which bronchiectasis may be secondary. A history of intermittent attacks of fever with abrupt changes in the volume and character of the sputum in a patient who otherwise presents the picture of bronchiectasis, is indicative of a combined lesion. Such patients, as a rule, are in relatively much poorer physical condition than those who have uncomplicated bronchiectasis. Drainage is out of the question in such cases, first because of the difficulty in determining the nature and extent of the lesion, and second because it is obviously impossible to drain either multiple abscesses, or a generalized bronchiectasis complicating a single abscess. Many of these patients, moreover, are in such relatively poor condition that the risk of lobectomy is prohibitive. Most of them also may have secondary pleuritis with adhesions, so that collapse by pneumothorax would be impossible. Extrapleural thoracoplasty promises the most to these patients.

Accurate localization is of the greatest importance to the safety and success of the drainage operation. Dullness to percussion, and in some cases localized tenderness, may be useful guides. Stereoscopic roentgenograms are essential to the determination of the site and depth of the abscess. A small abscess behind the shadow of the heart may be demonstrable only in roentgenograms taken in an oblique position. Local and nerve trunk anesthesia, combined in some cases with nitrous oxid and oxygen to the analgesia stage (Crile), will permit the operation to be performed painlessly and effectively. General anesthesia is, I believe, contraindicated in cases of pulmonary suppuration.

Whether the operation is performed in one or two stages depends on the condition of the patient and on the presence or absence of adhesions. Empyema is one of the most common and fatal complications, and is usually the result of leakage of pus into the pleural cavity, which may occur even when adhesions only partly seal off the general pleural cavity. If the patient is in urgent need of drainage, however, as evidenced by incessant cough, high fever and prostration, the risk of empyema may be the lesser evil, and suture of the lung to the parietal pleura and immediate drainage are indicated. If extensive adhesions are obvious, drainage is instituted at once, but in case of doubt as to the presence or extent of adhesions, a two-stage operation is the best safeguard against empyema. If the sutures are placed only thru the muscle bundles, there will be no leakage, and, therefore, no tear of the parietal pleura. While there is a certain risk of the suture penetrating the abscess, as in one case in my experience, suturing seems the most effective method for producing adhesions. We have repeated the old experiments in animals, of attempting to produce adhesions by cautery and chemical irritation, without success. A preliminary rib resection, including two or three ribs, and sufficiently extensive for wide exposure, facilitates the preliminary suturing and also exploration, but the combined effect of operative shock in an already prostrated patient, and inhibition of cough with resulting retention of secretion, may be fatal. In some such cases I have simply separated the periosteum from the ribs and sutured under them, leaving the ribs as splints until the later resection.

I prefer cautery incision of the lung, following localization of the abscess by exploratory aspiration. If localization has been accurate, either pus or foul smelling air will usually be aspirated from the cavity. If drainage is attempted without this localization, the abscess cavity may be missed, and it may fail to rupture into the drainage tract. In one such case, after repeated negative aspirations, I cauterized a drainage tract into the suspected area. The patient's symptoms persisted until a few weeks later, when he had a sudden fatal hemoptysis. Necropsy revealed an abscess about 2 cm. in diameter, with a wide area of surrounding pneumonitis. The abscess had been missed by the cautery by less than 1 cm.

Even large acute abscess cavities, and many chronic ones, will heal promptly if effectively drained. Residual bronchial fistulas can usually be healed by the application of silver nitrate cautery, or by plastic operation.

Graded Extrapleural Thoracoplasty. The patient is instructed to empty the secretion from his bronchial tract as thoroly as possible by assuming an inverted position across the bed with his head near the floor. At intervals of half an hour, beginning two hours before operation, he is given subcutaneously one-eighth grain of morphin sulphate in 2 c.c. of a 25 per cent magnesium sulphate solution. The operation is performed under combined regional and nitrous oxid and oxygen anesthesia, enough nitrous oxid and oxygen being used to produce a condition which Crile terms "analgesia." In my experience such combined anesthesia has been uniformly effective and satisfactory. The matter of anesthesia is of special importance in graded operations of this kind. A painful first operation will undermine the patient's morale for succeeding ones.

A posterior resection is performed thru a straight paravertebral incision, in two or three stages. The upper ribs are the least accessible on account of the heavy muscles, but it is quite feasible to resect all of the ribs, including the first, by this approach without any risk to the large blood vessels which lie anteriorly. The ribs are resected subperiosteally, segments 6 to 10 cm. long being removed. After resection the nerve trunks are each injected with a few drops of absolute alcohol. This reduces and often entirely prevents postoperative pain. The sternal ends of the ribs are resected next. This may be accomplished in one or two stages. Local anesthesia for the removal of the distal and medial segments is much simplified by the earlier alcohol injection, the anesthetic effect of which perists for some time. The upper medial segments are the most inaccessible in the portion lying under the scapula. These segments may be removed in two stages; the lower segments are removed thru a straight intercostal or T incision, and later the upper segments thru a tongue-shaped incision, encircling the lower angle of the scapula. At the end of each operation the wound is closed in layers, care being exercised to approximate the cut edges of the successive muscle layers. Usually a drain is inserted, and removed in from twenty-four to forty-eight hours. After the operation the patient is assisted to assume a head-down position across the bed several times a day, in order thoroly to evacuate secretions. There is usually very little pain incident to this procedure. The patient sits up as early as he feels disposed, often the second or third day.

RESULTS

During the last five years I have treated, by the method outlined, forty-six patients with chronic abscess, thirteen with bronchiectasis, and eight who had both abscess and bronchiectasis.

Nineteen patients had had the pulmonary abscess for from three to six months, ten from six to twelve months, twelve from one to two years, and four from two to five years. The abscess followed tonsillectomy in eleven instances, extraction of teeth in three, other operations under general anesthesia in three, and aspiration of foreign material in two, making nineteen (41 per cent) in which aspiration of infection was the probable cause. In thirteen instances the abscess followed pneumonia, and in ten the cause was indeterminate. Sixteen patients were operated on in one stage, thirty in two stages. Twenty-two were completely cured, twelve greatly improved, one not improved, and nine died in the hospital, an operative mortality of 19.6 per cent. Two of these deaths were due to sudden pulmonary hemorrhage, the others to infection. Necropsy in seven cases showed multiple abscesses in five, bilateral in one, and the whole lung was involved in the abscess cavity in another instance. Two patients died of unknown causes after their return home.

Ten patients with bronchiectasis were treated by graded thoracoplasty, without a death. All were improved by the operation, five so much so that their condition approximated a symptomatic cure. One has shown evidence of extension of the disease to the upper lobe. Three were operated on too recently to judge end results in two cases localized saccular bronchiectasis was drained thru a thoracoplasty incision. Both of the patients were improved. The stench from breath and sputum of one was most intolerable and he was in a critical condition. Three days after drainage the breath was almost odorless. The drainage has continued in these cases.

The eight patients having combined abscess and bronchiectasis were subjected to graded thoracoplastic collapse. Three of the patients died; one of unknown cause after he had returned home. Two were practically cured symptomatically, but one had had a constant cough and raised pus so foul that she had been forced to shun society and had become practically a recluse. Necropsy revealed multiple abscess and extensive bronchiectasis in all.

Patients with a more or less generalized infection, involving both bronchi and parenchyma, are usually in very poor general condition, and the physical findings and roentgenograms are of uncertain value, especially in localization. If untreated, the condition usually runs a progressive course. Pneumonectomy and plastic collapse are the only alternatives in surgical treatment, and both methods will probably always yield a high operative mortality and a low percentage of cures.

SUMMARY

Nontuberculous pulmonary suppuration includes abscess, bronchiectasis, suppurative pneumonitis and their combinations. Diagnosis of typical diffuse bronchiectasis and acute localized abscess, in which the roentgenographic findings are characteristic, present no special difficulty. Bronchiectasis secondary to chronic abscess, and abscess secondary to bronchiectasis are relatively common, but the determination of the presence or extent of such secondary involvement may be uncertain or impossible. Suppurative pneumonitis is often complicated by multiple abscess formation, and usually by a secondary pleuritis, which makes diagnosis difficult or impossible.

Acute peripheral abscess which shows progressive improvement should be treated by postural drainage, in the hope of securing spontaneous healing. Other abscesses should be drained. Centrally situated abscesses not suitable for surgical drainage are best suited for pneumothorax therapy. Chronic abscess, if single and peripheral, should be drained and, if healing is delayed, secondary plastic operation performed later. Multilocular abscess may be difficult to drain, but drainage probably offers the greatest chance of improvement at the least risk.

Chronic abscesses involving the destruction of the greater proportion of a lobe or whole lung are practically incurable except by lobectomy, which would probably yield a very high mortality in such cases. The greatest advance in the treatment of parenchymal pulmonary abscess will be attained by early operation, following accurate localization.

Localized saccular bronchiectasis may be drained with marked improvement, so long as the drainage is maintained. Diffuse unilateral bronchiectasis may be treated as a tentative measure by pneumothorax collapse, but such treatment has yielded a small proportion of cures, and the improvement is probably dependent on continued treatment. Lobectomy is of limited application, and has yielded, so far, a low proportion of cures and a high mortality. Extrapleural thoracoplasty is of wide application, and has resulted in a relatively large proportion of cases of marked improvement, in some cases approximating a cure, and in my experience without mortality.

Combined chronic abscess and bronchiectasis, especially of indeterminate grade, are relatively unfavorable to any method of treatment, but extrapleural thoracoplasty offers a fair prospect for improvement which may approximate cure.

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The Transmission of Arsenic from Mother to Fetus.

Rabbits and cats were injected with neoarsphenamin, intravenously by Frank P. Underhill and Frank C. Amatruda, New Haven, Conn., (Journal A. M. A., Dec. 15, 1923). After the desired number of injections had been given, the animals were killed. The tissues to be examined for arsenic were oxidized by Gautier's method as simplified by Johnson and Chittenden. The method for examining quantitatively the arsenic in the tissues was that of Gutzeit as modified by Sauger and Black. The maternal, fetal and placental tissues were examined for the presence of arsenic after the animals had received a varying number of injections. In practically every case, traces of arsenic were detected in the fetal tissues. The amount of arsenic obtained from the fetal tissues was never more than a trace, regardless of the number of serial injections received by the animal.

THE USE OF THE X-RAY IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS

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Physical diagnostic methods, even in the hands of experts, are subject to great variation of interpretation. Impaired resonance to one observer is normal resonance to another equally capable. Normal breathing in the opinion of one is abnormal breathing in the opinion of another. Refer to any textbook on physical diagnosis, and you will find that no two authors agree on what constitutes an early diagnosis of pulmonary tuberculosis, which only emphasizes the fact that physical diagnostic methods are not exact and are too often subjective.

The present popularity of the x-ray might be attributed to education of the medical profession during the World War. It was at this time, when facilities for thoro physical examination were limited, that the x-ray was depended upon to furnish evidence otherwise unobtainable. Clinicians and roentgenologists must realize that the roentgenograph supplies only a silhouette of the pathology present and it is, therefore, imperative that this shadow be properly interpreted. A knowledge of the pathology of tuberculosis infection naturally enables one to understand the significance of the different shadows seen upon the film or plate.

Primary Tubercle. Pathologists have demonstrated that in practically all instances the primary tuberculosis infection takes place in childhood and, in at least fifty per cent of the cases, before the individual reaches the age of fifteen years.

The primary infection is usually a "subpleural peribronchial tubercle" which either heals completely, leaving only a mass of scar tissue or caseates. If caseation takes place, it may become incapsulated by fibrous tissue, degenerate and later become infiltrated with lime salt deposits, or the caseated area may soften, break down and the disease spread into surrounding lung parenchyma or the primary tubercle may expel its contents into a bronchus and then heal. The healed primary tubercle, especially when infiltrated with lime salt deposits, is seen with surprising frequency in radiographs of the adult chest. The primary tubercle is usually single, occasionally multiple. When single, it is represented by a sharply circumscribed spot, varying in size from that of a pin head to that of a hazel nut, situated usually in the peripheral portion of the lower lung field. The deposit frequently occurs in that portion below the level of the dome of the diaphragm and may, therefore, be invisible on the radiograph but is visible fluoroscopically by rotating the patient under the screen.

From the primary tubercle the disease usually progresses thru the peribronchial lymphatic structures to the regional hilum glands, which latter not being in a position to arrest the bacilli, the disease spreads to the lymph glands of the mediastinum, constituting the so-called "thoracic tuberculosis" of Kuss, and concludes the first stage of the infection of the organism. The regional hilum and mediastinal glands, like the primary tubercle, undergo one of two changes; (1) retrogressive, or healing, that in which the tuberculosis process absorbs and fibrous tissue proliferations occur; and (2) progressive, that in which the glands caseate.

When caseation occurs, the gland may later become incapsulated with fibrous tissue, in which case the caseous material degenerates and later becomes infiltrated with lime salt deposits and healing takes place or the disease may linger in a latent form, which is by far the most common.

Latent Tuberculosis. This latent form of tuberculosis is an important factor in the development of the adult type of pulmonary tuberculosis. Experimentally it has been shown that, if one inoculates guinea pigs with pulverized lime salt deposits, tuberculosis frequently develops, thus proving that even in calcified glands the germ is still alive.

As long as the disease is confined to the lymphatic structures and the lung parenchyma is not involved, the clinical symptoms are not marked, but just as soon as the lung parenchyma becomes involved, the disease becomes manifest by the presence of more striking clinical phenomena, such as fever, loss of weight, loss of strength, cough, expectoration, etc.

Tuberculosis exists everywhere and all of us receive our daily dose of tubercle bacilli in the air we breathe. As long as our resistance is normal, we are able to take care of this infection but, if our powers of resistance are decreased or the dose be increased, we come down with the disease.

Adult Type of Tuberculosis. The adult type of tuberculosis makes its appearance most frequently shortly after the twentieth year of age. It is at this period that the individual begins his independent struggle for existence and is, therefore, most subjected to mental stress, physical strain and all those additional factors which are known to decrease one's resistance as well as increase one's opportunities for infection such as unfavorable working and social conditions, etc. In the great majority of instances, this adult type of disease begins by gradual extension from the hilum upward and outward along the peribronchial lymphatic paths to the uppermost portion of the lung on one or both sides. The process may heal out completely at any stage of the infection. If the infection be slight, the individual attributes failure of health to being run down, overwork, frequent colds, etc. After the disease spreads from the peribronchial structures to the lung parenchyma, the tendency to progress is most marked.

These lesions are characterized by a caseation process with more or less tendency to fibrous tissue proliferation. If caseation predominates, the disease is associated with active clinical phenomena, especially fever. The caseous process may become surrounded by fibrous tissue and heal out completely, leaving only a scar which may later become infiltrated with lime salt deposits. If the caseated area breaks down, it leaves an excavation and these excavations vary in size from that microscopically visible to those as large as an orange. Excavation is usually followed by subsidence of fever, increased expectoration and tubercle bacilli may for the first time be found in the sputum.

Chronic Fibrocaseous Tuberculosis. This form of tuberculosis is by far the most frequent met with in practice, and is characterized by periods of activity, which means progression of the process and by periods of inactivity which means retrogression. During the period of exacerbation the chronic consumptive presents marked clinical phenomena such as cough, fever, loss of weight, loss of strength, etc. Examination of the chest from a physical diagnostic standpoint yields more information than in the quiescent period, because the period of exacerbation is always associated with dissemination of disease and this makes itself more apparent from a physical diagnostic standpoint by the presence of characteristic rales. In these cases one sees upon the radiograph patch-like spots with indefinite irregular borders, representing the freshly caseated areas. There will also be found band or line-like shadows, radiating outward and upward from the hilum and these shadows have sharply circumscribed borders. At times one will find embedded therein the circular or irregularly circular areas of decreased opacity which represent excavated lung tissue. These fresh exacerbations are usually found in lung portions beneath the older and more chronic lesion and are due most frequently to aspiration of infectious material. The roentgenograph will supply evidence tending to prove the age of the lesion with which we have to deal, presence or absence of excavation, character and extent of fresh invasion.

We are convinced that certain shadows are always associated with an active progressive disease, whereas other shadows are invariably associated with a quiescent, retrogressive, or arrested process. In general, it might be stated that the more sharply circumscribed the shadow, the older and less active the disease. Shadows of this type are seen in fibrocaseous types of tuberculosis with fibrosis predominating. The more diffuse or indefinite the shadow, whether in the shape of patch-like spots or irregular lines, the more active the disease. Shadows of this sort are most frequently seen in the caseous forms of tuberculosis.

Chronic Quiescent Fibrocaseous Tuberculosis. From a physical diagnostic standpoint the chronic, fibrocaseous lesions in the period of quiescence offer more difficulties to the clinician, especially if the lesion is bilateral. These lesions are frequently associated with extensive fibrosis. The combination of air containing lung tissue and fibrosis may be such that slight impairment of percussion resonance escapes all but the skilled observer. The lesions may be quite "dry." Rales, if present, are of the variety originating in expanded bronchial tubes or excavations and, therefore, of a bubbling character. The disease being quiescent, rales, particularly of the crepitant or crackling variety which occur in showers on expiratory cough and are characteristic of fresh invasions, are absent. Thus, if from a physical diagnostic standpoint the clinician is unable to detect impairment of percussion resonance, as a result of the character of pathology present; if the breathing is of the indefinite or undeterminable variety, escaping attention; and if rales are absent or only of the bubbling nonresonating variety; the diagnosis of chronic bronchitis is frequently made, especially if the patient is in good general physical condition and complains only of cough and expectoration.

It is in this group of cases that the roentgenograph will disclose information quite unexpected by the average clinician. To his utter amazement and astonishment he will find that he has overlooked disease which may involve the upper half of both lungs. The shadows characteristic of this type of disease are, as a rule, sharply defined and linear. Embedded in these opaque areas one often sees the central clear spots representing cavities.

Unilateral Pulmonary Tuberculosis. In the presence of an extensive process in one lung it is very important to determine the condition of the contralateral lung. An extensive process on one side produces compensatory changes on the other side; therefore, it is difficult to determine if the sharpened vesicular breathing which one hears on the healthier side is compensatory or represents a beginning extension of the disease.

In all cases of unilateral pulmonary tuberculosis we have to contend with sound transmission, especially to the apex on the healthier side. Sounds from the badly infected side may be so transmitted to the healthier side that it is utterly impossible by physical diagnostic methods to decide whether you have an involvement of the supposedly healthy apex or not. The roentgenograph will supply the information desired in an unfailing manner.

Even large cavities frequently escape recognition by physical diagnostic methods, especially when centrally located and covered by air containing lung tissue.

Early Diagnosis of Tuberculosis. In the early diagnosis of tuberculosis, the x-ray has a definite and firmly established place and is far superior to phyisical diagnostic methods in the hands of the average clinician. Unless one is thoroly trained in the art of physical diagnosis and has acquired a very accurate technic in percussion and developed a very well trained ear in ausculation, his physical diagnostic methods will be essentially negative and the diagnosis will have to be made upon the clinical history in the absence of roentgenologic studies. In the hands of an expert the stereoscopic plates will reveal changes corresponding to the area involved.

One may see a very delicate fan-shaped area of decreased opacity, extending from the hilum to the apex or to the upper lateral lung field. The shadows are linear, more or less beaded or varicose and present fuzzy or circumscribed borders, depending upon the activity or inactivity and age of the lesion. A reexamination of the chest will almost invariably reveal a persistent fine crackle on expiratory cough over the area affected as revealed by the stereoscopic plates. These changes are also frequently seen in nontuberculous respiratory infections but in the latter roentgenographic changes are not persistent and the rales are not continuously present day after day, nor do the rales possess a resonating quality.

Chest Deformities. Chest deformities are present in nearly all asthenics, even in many individuals of the so-called "sthenic habitus." These deformities are the result usually of an upper dorsal scoliosis and lead to an enormous number of erroneous diagnoses. Deformities of this sort produce changes in physical findings which are too frequently misinterpreted by the clinician.

Examination of the apex on the side of the drooping shoulder reveals impairment of percussion resonance, abnormal breathing and, since atelectasis frequently coexists, a fine crackle may be heard on auscultation. The individual may have presented himself for examination because of loss of weight, strength and appetite and an occasional elevation of afternoon temperature. The diagnosis of apical pulmonary tuberculosis is made. A careful roentgenologic study of stereoscopic plates will exclude pulmonary tuberculosis, when the lung field in the impaired area shows an entire absence of abnormal shadows and reveals only the deformity of the bone framework of the upper quadrant. I cannot too strongly emphasize the importance of a stereoscopic, roentgenologic study of all cases, wherein an early diagnosis of tuberculosis is made.

Chronic focal infections, chronic dental and nasal sepsis, thyrotoxicosis and many other conditions will give rise to clinical symptoms suggestive of tuberculosis and, unless the clinician has employed every known procedure in arriving at a correct diagnosis, he is not practicing medicine in accordance with present day standards.

Peribronchial Infiltrations. It is in the so-called border-line type of disease that the roentgenologist as well as the clinician makes the most mistakes. There is a great tendency on the part of the roentgenologist to diagnose as tuberculous insignificant changes in the peribronchial lymph paths, and there is the tendency on the part of the clinician to overlook the really tuberculous forms of peribronchial infiltration. From a physical diagnostic standpoint the cases are extremely difficult of diagnosis as long as the infiltration is limited to the peribronchial structures.

There will be less difficulty in arriving at a diagnosis in cases wherein the lung parenchyma is involved, because the physical findings are usually fairly definite and the roentgenologic findings are almost invariably positive. As a general rule, changes which occur in the upper half of the chest must be proven not to be tuberculous, whereas changes in the lower half of the chest must be proven to be tuberculous.

Roentgenologically the deep peribronchial types of infiltration, when tuberculous, usually present a beaded varicose appearance with more or less sharply defined borders and this network of shadows may be traceable to the peripheral parts of the lung field and radiate from the hilum outward in all directions. Frequently the shadows are beset with larger dots, representing enlarged lymph nodes, and in some cases lime salt infiltrations representing the remnants of an earlier childhood infection will be found in the hilus shadow or in the lung field.

Somewhat similar changes are found in the postinfluenza chest or even after pneumonia or bronchopneumonia, but in the tuberculous infiltrations the shadows are more clearly defined, present a more beaded appearance, show a tendency to involve the upper half of the lung and are persistent for months or years.

The peribronchial type of tuberculous infiltration frequently later invades the lung parenchyma, especially that surrounding the root or the hilum and changes in this area are readily determined by the continual presence of resonating rales which may occur in showers, especially in the first, second and third interspaces along the border of the sternum in front and posteriorally in the paravertebral region on the level of the second to fifth dorsal spine.

If softening occurs, excavation takes place but it frequently escapes recognition unless the cavity is large enough to transmit characteristic auscultatory phenonema. Naturally infiltrations of this sort are readily seen and studied upon stereoscopic films. The evolution of the process can be watched and later, if excavation occurs, we know the exact size and location of the cavity.

Tuberculous and Nontuberculous Bronchitis. The bronchial types of infiltration are tuberculous or nontuberculous in nature and offer extreme difficulties to both the clinician and the roentgenologist.

In tuberculous bronchitis one finds only the physical findings characteristic of a bronchitis. A careful analysis of the history supplies much information tending to establish its tuberculous nature and the sputum, if examined repeatedly after methods of concentration, frequently reveals tubercle bacilli, especially if the bronchial mucosa is ulcerated. Ordinary bronchitis produces few if any roentgenologic changes but in the tuberculous forms we find the bronchial tree in the affected area greatly thickened, presenting an irregular or beaded appearance. The shadows are sharply defined in the more chronic varieties and less clearly defined in the more acute varieties. The disease may be unilateral and in most cases we find roentgenologic evidence of a previous tuberculosis infection in the nature of lime salt deposits in the lung field or in the glands at the root of the lung. Slight retractive changes in the mediastinal contents are common in chronic cases, and occur less frequently in nontuberculous varieties.

Acute Types of Tuberculosis. In the diagnosis of the acute types of tuberculosis the roentgenograph is also of enormous assistance. The diagnosis of miliary tuberculosis can often easily be made by means of the roentgenograph alone but it must be realized that the small speck-like spots which represent miliary tubercles are not present until the disease is quite advanced, and one must be very careful not to confuse this condition with the shadow produced by the various pneumonokonioses, seen particularly in miners. These spots differ from the miliary tubercle in that mineral deposits in the lung tissue produce very sharply circumscribed spots usually much larger than the miliary tubercle and may be as large as the head of a pin, whereas the miliary tubercle is a very fine speck with a hazy border and on good plates one is able to see a very fine threadlike network of the lymphatics of the lung and these miliary tubercle will be found along and embedded in this network, giving it a beaded appearance. Mistakes in the diagnosis of these two conditions are exceedingly common.

I distinctly recall the case of a dentist who telephoned me long distance, requesting an immediate examination of his lungs because he had "miliary tuberculosis." His strength of voice and his manner of speech was such that, even over the long distance wire, I doubted the existence of that condition. I was, therefore, not surprised to find on my examination that the spots which were thought to be miliary tubercle were nothing but mineral deposits and the history of the case elicited the fact that ten years previously he had worked in lead mines.

I recall another case, wherein a diagnosis of miliary tuberculosis was made by a prominent internist. The case was that of a man very acutely ill with high fever, cough, expectoration, etc. The sputum contained tubercle bacilli, both lung fields being studded with small flake-like spots. The patient was placed at bedrest and his fever disappeared completely in a few days. An analysis of the case showed that the patient had an acute bronchitis, accounting for his acute illness, that he had been a lead miner for years, accounting for the flake-like spots, a careful reexamination showed that he had an old chronic tuberculosis of his right apex and a study of the roentgenograph revealed an opacity corresponding to the affected area. The tubercle bacilli-laden sputum naturally came from his old chronic tuberculosis infected area.

Pleuritic Exudates. Pleuritic exudates follow pleuritis and are either idiopathic or secondary. The idiopathic variety arise spontaneously, whereas the secondary types are associated with previous nontuberculous respiratory infections, pulmonary emboli, etc.

In all pleuritic exudates it is important to determine their tuberculous or nontuberculous nature. A consideration of the clinical history supplies valuable evidence. By physical diagnostic methods one cannot penetrate beneath the exudate to determine the status of the compressed lung, and compensatory changes on the other side render determination of the integrity of the superficial lung parts difficult and of the deeper parts impossible. But the x-ray permits us to view, even thru an exudate, changes in the lung parenchyma and supplies us with a silhouette of the pathology in the healthier lung. Important for a diagnosis of exudate due to tuberculosis infection from a roentgenologic standpoint are evidences of a former tuberculosis infection in the lung parenchyma or peribronchial structures and hilum of the healthier side and shadows corresponding to the distribution of tuberculosis pathology in the lung on the side of exudate.

For the successful radiography of the lungs it is important that clinicians doing their own work should acquire a technic and adhere to it. As a rule, the clinician should make his physical examination, chart his physical findings and make a diagnosis on the basis thereof before using the x-ray. The x-ray is to be used in the light of a "court of last appeal" and, if the clinician resorts to its use before exhausting other means for arriving at a conclusion, he will find that sooner or later his physical diagnostic ability will entirely leave him and he will be depending more and more upon the x-ray, with the result that he will eventually find himself incapable of arriving at a conclusion by physical diagnostic methods and, if he depends upon the x-ray alone, he will make many bad mistakes. The x-ray is a valuable aid but it must be used in combination with a carefully considered clinical history, a complete and thoro physical examination, supplemented by laboratory work and, above all, the roentgenologic findings must be interpreted by one who knows medicine and pathology and not by an inexperienced, untrained x-ray technician who atempts to cover the entire field of medicine and surgery and make diagnoses on the basis of x-ray findings alone.

REST IN THE HOME TREATMENT OF PULMONARY TUBERCULOSIS *

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Among institutions devoted to the care and treatment of pulmonary tuberculosis, rest is an established and definite therapy. In fact, at the present time it is the first and most important of all measures used during the major part of the consumptive's sojourn in a sanatorium. Here rest has become a science and is applied according to definite rules. At the present time there are available in the United States about seventy thousand beds for tuberculous patients. Last year over one hundred thousand men, women and children died tuberculous deaths. Different experts have set the ratio of active cases of tuberculosis at from three to ten for each death. Taking the conservative estimate of three active cases for each death, we have three hundred thousand active cases of tuberculosis in the United States at any given time.

If, then, every available bed is filled, there are left two hundred thirty thousand who must of necessity be treated, if they are to be treated at all, in their homes. These cases, in all stages of disease and in all manner of domiciles, should have the privilege and opportunity of obtaining that most valuable of all aids to their arrest and cure, scientific rest. Undoubtedly many of the busy physicians in general practice who must, perforce, direct the treatment of the larger part of this army of two hundred and thirty thousand in their fight for health, have no real definite idea as to just what constitutes rest.

Many times it seems to be just general advice to take a rest, go on a vacation, spend a month in the mountains or on the seashore, or just to go home and rest, leaving to the untrained patient the details of that rest. Krause said, as late as last year, "Fresh air and putting on weight dominate the field of patient and doctor outside of the sanatorium." Often the patient is told to go home and go to bed, and report back at the office in one or two weeks. Any patient with active tuberculosis, who needs rest in bed, would certainly endanger his progress by going to the doctor's office, and the doctor could not get intelligent information from an examination of a patient following such activity.

This is not a plea for home treatment as against sanatorium treatment, but an attempt to help in the working out of the problem of rest of any active case of pulmonary tuberculosis that is to be taken care of in any home. When the diagnosis of active disease has been made, and patient and doctor have agreed on the partnership to be established for a cure of that activity, there should be no secrets between the partners. The doctor must give to the patient every bit of evidence and information he has that will help the patient to realize the necessity of his whole-hearted cooperatoin. The patient must lay bare before the doctor all the secrets of his life, all his family skeletons, his abilities and ambitions, his defeats and successes, his loves and hates, and honestly his financial standing, obligations and resources. These must be carefully studied. This confidential conference is the ground work on which future success or failure is often made.

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It is better to take the time necessary for a thoro preparation for the rest cure before starting than to start in and have interruptions continually interfering. All dental work that would likely be necessary should be done before starting. Many a cure is prolonged by the necessary care of aching teeth, requiring inopportune trips to dental offices. Business affairs must be arranged for an indefinite leave. Few are the cases in which a definite time promise can be made with safety to the patient. Household duties, if the patient be a wife or mother, must be shifted to someone else. Conditions must be so fixed that young children are absolutely isolated from the sick patient. The father or mother must understand that the great danger to their young is in personal contact, and that this sacrifice at the present time may be the means of saving their children from a like experience. All members of the family should agree to cooperate in every way with the patient's fight for health.

The physician should go to the home and with the patient inspect the whole house and premises. The best room in the house for the cure should be selected. The room must have the windows, at least two, on adjoining sides. It should be selected as near the bath and toilet as possible, and as far away from the household noises and disturbances as can be arranged. If there is an adjoining porch, it should be made available for use by having the door of such size that the bed may be moved from the room to the porch. The room must be kept neat and clean; the furniture need not be numerous or expensive, but should be harmonious, and rest will be more restful if the walls are of soft hues which will not glare when the light strikes them. If possible, two single beds should be arranged, one for day and one for night use. During the acute sickness, if two beds are used, they should be put closely together when transferring the patient from one bed to another.

The one striking symptom of tuberculosis is tiredness or fatigue. Therefore, the patient should avoid fatigue. The patient with acute tuberculosis is tired, weary and worried and the problem is to rest him physically and mentally. Early in the disease, when it is most tractable, the patient is worried about himself. Probably all tuberculous patients fear death. In place of this fear the physician must instill into the patient's mind a confidence and faith of future health and usefulness. The more advanced the disease the more optimistic the sick one becomes.

All are agreed that the proper place for the tired and wearied consumptive to take his rest is in a comfortable bed in pleasant surroundings. Krause asks, "For what is rest but relief from strain and where shall we place it in therapy, if not first and always first?" What then does rest in bed mean? It means simply rest in bed, absolute rest, until the patient is rested, and the signs of progressing disease, as temperature over 99.5°, rapid pulse, and general malaise have either been eliminated or remain stationary for several weeks. By absolute rest is meant taking meals in bed on a back rest, not leaving the bed for toilet purposes, reading only for short periods, visiting allowed for a few definite minutes at a time, letter writing reduced to a minimum and no games as of cards or checkers. If his affairs of family and finance have been taken care of and the patient has been converted to the faith of the gospel of health, and if the physician at every visit in words of conviction reiterates the reasons for continuing and points out the progress made, the cases are few indeed that do not quickly respond.

In the average case after from two to six weeks the temperature and pulse will have dropped and the patient himself knows he is better. He feels ambitious and is anxious to be up and doing. This is the most critical moment of his battle. If he has learned his lesson of fatigue and rest, he is ready to begin exercise. At every visit he must be impressed with the necessity, at the first feeling of fatigue to at once rest. Dettwiller said, "If after a walk there occur palor with slight cyanosis, tendency to dizziness and yawning, a tightness of breathing, feeling of discomfort in the chest, and more or less troublesome sensation in the region of the heart, absolute rest should again be immediately ordered." This is as true today as it was fifty years ago. With all increasing activities, fast pulse that persists, increased temperature that does not go down within one-half hour of cessation of activity are signs pointing to danger. A fatigue which gives a grateful sense of rest and is entirely relieved before the next period of exercise is allowable.

The first activities should consist in sitting up in bed for increasing periods, gradually lengthening the periods of reading and writing. Card games may now be allowed. Visitors may have more time, but they should be cheerful. This process may well take a month or two. The patient may now be allowed to sit up in a chair, out of bed for five minutes, increasing five or ten minutes a day for the next two or three weeks. The reclining chair may be used, but for long periods of use provision must be made to have the feet raised even with the hips. During the next week the patient may walk to the bathroom and, if feeling strong enough, begin to take tub baths. He can now be allowed one meal a day at the family table and the next week two.

When ready to begin walks the amount of walking should be carefully prescribed. I have found in cities the most satisfactory way is to gauge the walks by city blocks, increasing about one block every two or three days. It is surprising what long walks this leads to in a short time. As Brehmer taught seventy years ago, all walks for consumptives should be on the level or lead uphill, so that if fatigue overtook the patient it would not be necessary to climb in getting home. As ability to stand exercise without fatigue increases, automobile rides are of value, also light games, as quoits, croquet and later golf, remembering always that a severe strain of any kind may mean going back to the beginning and starting all over.

The diet should be well cooked and tastefully served. There is no special diet. A well balanced, varied diet, suited to the patient's likes and of quantity to satisfy his appetite is usually all that is necessary. Three meals a day at regular intervals will often suffice to make a regular gain, when trying to feed more often will upset the digestive process so that the actual amount of food consumed is less. Coffee, tea and light beverages add to the appetite and do no harm in most cases. To the person in the habit of smoking, moderate smoking may be allowed in most cases, no smoking, of course, being allowed in cases with laryngeal complications.

The personal toilet should be zealously attended to. While a bed patient, sponge baths are given two or three times a week, cleansing teeth after each meal, care of sputum excretions. Women should cease all activities during menstrual periods, and the physician should carefully confer with the patient in regard to sexual habits. Cases with laryngeal complications, even if only with a hoarseness, must be taught the necessity of vocal rest. This rest consists of no talking, not ever whispering. A pad and pencil used conscientiously will cure many cases of laryngeal tuberculosis. Each patient should keep a record; this should show temperature and pulse readings as required. At various periods during the cure a diet list should be followed for two or three days at a time. The amount and nature of exercise should be recorded, with corresponding physical reactions. Note special pain, hemorrhages, condition of bowels, etc. Light laxatives as liquid paraffin or phenolphthalein are at times required, but most cases can be regulated with diet, as vegetables, fruit, bran, etc.

I have not the time to take up the special rest therapies, such drugs as morphin, codein, heroin, allonal, etc., postural rest, mechanical compression of upper chest, controlled and diaphragmatic respiration, as recommended by Knoff or artificial pneumothorax. All of these aids are indicated and may be used in selective cases in the home.

I have not offered any new ideas or principles, but have endeavored to outline a general system of rest cure, easily understood by the patient, and cheerfully carried out in most cases. This, I believe, offers to the average patient all that can be gained for him in his home.

Romance of Vaccination. Few will associate the very prosaic act of vaccination with romance, but a dip into the pages of the early history of this life-saving measure will reveal many tales of absorbing interest. In the January issue of Hygia I. K. Russell tells the story of James O. Pattie, who set out with his father in 1824 to carry "smallpox vaccination" to California. Traveling down the Colorado River, they were ambushed by Indians, but succeeded in escaping, only to be captured later by unfriendly Mexicans and thrown into jail in San Diego. Here the older Pattie died. His son, James, after horrible sufferings, was released on condition that he would consent to vaccinate the governor of the prison, who was in fear of the epidemic then raging. Pattie stood out for the release of other members of his party, and finally was set at liberty and given the commission to vaccinate all the inhabitants of the California coast. He traveled from mission to mission, meeting with many adventures, but vaccinated all he met, including the Indians. When he finally presented a bill for his services, payment was at first made conditional on his becoming a Catholic and a citizen of Mexico. When he attempted to remonstrate, he was robbed of everything he had.

THE RESPONSIBILITY OF THE CARRIER FOR INFECTIOUS DISEASES *

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In deciding questions of much importance or solving technical problems it is quite essential to thoroly understand the entire subject. The more comprehensive the understanding, the more complete and satisfactory the solution. This is especially true when we attempt to deal with subjects of such great magnitude, tho nevertheless so intricate and technical, as the etiology and transmission of communicable or infectious diseases.

One cannot study history, ancient or modern, to any extent without becoming profoundly impressed by the part acute infectious diseases have played in the role of retarding human progress. Medical history has recorded many outbreaks of acute infectious diseases, which have raged in pandemic or epidemic forms in various parts of the world at various times, and which have taken awful tolls in human lives.

Comparing the past health and sanitary conditions with the present, and basing our comparison on existing statistics, we at once recognize the fact that medical science has made great advancement. A number of such most dreaded diseases have now been completely conquered, both as to prevention and virulence; while others are more or less imperfectly subdued. This is due to the fact that today we possess a better knowledge of how such diseases are caused, contracted and transmitted. The science of preventative medicine at the present day occupies a most exalted position. The ability of preventing the spread of certain communicable diseases is now valued and appreciated as much as the ability of curing them or alleviating the suffering they produce.

By an infectious disease is meant a condition in which pathogenic bacteria have gained ingress into the tissues of the body thru the skin or mucous membrane, and where they grow, multiply and develop toxins or poisonous products which are injurious enough to produce symptoms. Every infectious disease, therefore, requires some specific microorganism as its etiologic factor and such offending microorganism must find its way in some manner into the human organism and develop toxins producing symptoms before it may be termed an infectious disease.

By a carrier, and I wish here to use the term carrier in its broadest sense, is meant an individual who harbors pathogenic bacteria in his body and thus becomes the instrumentality of transferring them to those with whom he comes in contact. This individual may be a human being or he may be some other living being. If a human being he is designated a human carrier. He may be a healthy individual and never have suffered from the effects of the specific bacteria his body harbors. He is then called a healthy carrier. If his body still harbors specific pathogenic bacteria as the result of a recent acute infectious attack, he would be termed a convalescent carrier. If he should continue to harbor the bacteria for any length of time, he would become a chronic carrier.

A carrier, therefore, is a living, moving, bacteriologic incubator, in which pathogenic bacteria multiply and become virulent. It can readily be seen that a carrier is a most serious menace to the well being of his associates; and, when we stop to consider that the condition found in the human body are almost ideal, or so well suited for bacterial growth and virulence, we may well marvel that not more human beings are carriers.

It is a well established fact that bacteria, like all other living identities, must have suitable conditions in which to grow and thrive, such as proper food, moisture, temperature, etc., and such conditions are furnished by the human carrier most accurately. Bacteria are readily cultivated in laboratories under proper conditions, but it is an error to assume that pathogenic bacteria will grow, thrive and multiply, becoming virulent, when conditions are not suitable such as are found outside of the human body or free in nature.

Pathogenic bacteria do not multiply to any extent in soil of an ordinarily existing temperature, nor in cold water nor on fomites. They may exist and remain active for some time, varying according to the specific strains and depending upon existing climatic conditions, but such agencies as sunlight, low temperature, dryness, etc., soon destroy most of them.

It has been taught in our textbooks that epidemics spread along the line of travel, which is true, but the teaching that the travelers mainly carried the bacteria in their clothing, hair, finger-nails, books, papers and baggage, thus spreading them, needs to be modified, for it has been found that the infection spreads in spite of the most thoro fumigation of all bag and baggage, wearing apparel and all the individual's belongings. It is the living, breathing, warm, moist, human being that is the main source,

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the fountain from which springs forth a constant fresh supply of vigorous, virulent bacteria, contaminating and producing infections in human beings, and not so much the individual's belongings.

For centuries humanity watched in breathless agony the ravages of the disease that was called the black death or bubonic plague. It swept over large territories with alarming swiftness and terrible destructiveness, often destroying its victims in three days or crippling for life, nine out of every ten becoming infected. From the tenth to the fourteenth century, it raged in Europe to the extent that from 25 to 50 per cent of the entire population succumbed to its ravages. In India, where it has probably done its greatest destruction, it is estimated that over 5,000,000 died from it in a single decade.

It is almost beyond human comprehension to attempt to estimate the aggregate grand total in lives lost by this disease alone. Even today we can do very little that will have any influence upon the course of the disease after it has once been established, but we now do know how to prevent its spread. Less than thirty years ago the specific cause of this disease was discovered. It is due to a microorganism called the bacillus pestis, and which is responsible for a very virulent toxin. Swiftly one discovery followed after another until today we know the entire story.

This bacillus gains ingress into the human body by virtue of a biting flea, which punctures the skin and deposits the bacillus in the tissues, in a liberal sense a carrier. Where do such fleas become contaminated or obtain their supply of bacteria? It has been known for some time that rodents especially the rat and the ground squirrel are very susceptible and do die in large numbers from bubonic plague. This particular kind of a flea feeds on dead and sick rodents. Becoming contaminated, such fleas transmit the bacillus to the healthy human being, and again from the sick individual to the healthy. This bit of knowledge, simple as it is, is enough to enable us to completely conquer this dreadful human scourge. Such remedies as will exterminate the rodent and the fleas are not impossible, and the humans, sick and well, can be protected from being bitten by proper precautions.

Probably the deadliest enemy that man has ever known is malaria. Dr. Hutchison, an able authority, says it has in all probability done more than any other single destructive influence—flood, tempest, frost, war, famine or earthquake—to check the progress of the human race and keep man savage, feeble and half civilized. The real foe of the early settler in the Atlantic and Southern States was malaria. It has to its credit 25 per cent of all the mortality in the tropical and subtropical countries. Malaria has been known for several thousand years. Hippocrates gave a good account of it 400 B. C. Not until recently, in 1880, did Dr. Laveran discover the plasmodium malariae in the blood of malarial patients and in 1887 the parasite was discovered in the intestine of certain mosquitos by Dr. Ross. In 1911 Dr. Bass cultivated the parasite and found it to be an animal parasite, living at the expense of the red blood corpuscles of the human being only. So far as is known, the conditions necessary for the existence of the malaria parasite are found only in the blood of the human being and the bodies of certain mosquitoes. Preventing the mosquito from biting an individual suffering from malaria will prevent his supply and thus stop the spreading of this disease. Thus, again, we see in this the great responsibility of a carrier.

Another terrible destructive disease is sleeping sickness which has raged extensively in certain districts in Africa during recent years. It has now been definitely determined that the etiologic factor of this disease is a spiral microorganism called the trypanosoma. Trypanosomiasis, or sleeping-sickness, does not attack human beings only, but also some of the lower animals, such as the horse, antelope, African buffalo and various other large wild game.

The trypanosoma, like the spirillum palida causing syphilis, causes a general systemic invasion and is always present in the blood and tissues of individuals suffering from sleeping-sickness. The responsibility of transmitting this microorganism from the sick to the healthy rests upon the tse-tse fly. This fly obtains the organism from infected individuals, human or otherwise, and in turn inoculates the victim by its bite or sting, very similar to the method used by the mosquito in disseminating malaria. Thus we see how again a carrier is responsible for another very fatal malady which annually

Typhoid fever is another disease of world wide renown and prevalence. It dates back at least to the time of ippocrates and Galen. Unnumbered are the human beings who have succumbed due to it, and enormous are the economic losses produced by it. Its etiology is so well known that it would be superfluous to describe or even mention it. It is only forty-three years since the bacillus typhosus was discovered. It is an organism closely allied to the colon bacillus, and impossible to differentiate by the microscope alone. Its natural habitat is the human alimentary canal. They multiply very little if at all upon the soil or in fomites under ordinary circumstances, owing to the improper amount of water, the influence of sunlight, improper temperature, etc. In large bodies of water they tend to die out in a comparatively short time as a result of dilution, currents, sedimentation and the influence of other bacteria, unless they are constantly replaced by a fresh supply.

The bacillus enters the body by way of the digestive tract, being introduced with drinking water or food, very rarely in any other way. Within the body the bacillus selects the lymphoid tissue in the intestines, the mesenteric glands and gallbladder, the bone marrow, the spleen, as the most suitable locations for its development. They are eliminated from the body in the feces in large quantities, also in the urine and the sputum by persons suffering from the disease.

It is the human bowel excretions that furnish our main supply of typhoid bacilli. Curiously enough, about 4 per cent of the thyphoid fever patients who recover become chronic or permanent carriers, and will continue to harbor and eliminate the bacilli indefinitely. Convalescents who continue to be carriers for more than ten weeks very rarely become entirely cured bacteriologically. It is now quite generally admitted that in all cases of typhoid fever the gallbladder becomes more or less extensivly infected and the bile contains the bacilli in large quantities. It can, therefore, readily be understood why so often a choleocystitis, acute or chronic, producing carriers, follows an attack of this disease.

In disseminating typhoid fever the typhoid convalescent always plays the most important role and he may accordingly always be considered a carrier for some time after the attack. Complicating the task of determining typhoid carriers, it is well known that a number exist who have never suffered from the disease themselves. It is estimated that the number of such healthy carriers are from .3 to .4 of 1 per cent of the entire population in large cities like New York. The latter would, therefore, have at least 25,000 healthy cariers. This number, added to the number of chronic and convalescent carriers, makes a grand total large enough to menace the entire population.

The manner in which the bacteria find their way from the carrier into the food or water supply may be one of many. The most common is for contaminated fecal matter or urine to find their way into the drinking water. Fresh vegetables, such as lettuce, etc., may be fertilized with contaminated sewage. Flies often carry the bacteria contaminating the food or milk. Healthy or chronic carriers engaged as cooks or milkmen often contaminate the food or milk.

In a recent analysis by the Minnesota State Health Board, 37 carriers were found responsible for infecting 220 people with a mortality of 12. The now famous typhoid Mary of New York infected 57 cases with 3 deaths. An outbreak of 25 cases recently was traced to a single carrier who was employed as a milkman on a farm. Many other examples, illustrating the responsibilities of the carrier in transmitting the disease, are now actually on record.

I have purposely selected the diseases already mentioned as most nearly representing the various phases of the points I wish to emphasize in this paper, namely, the responsibility of the carrier for infectious diseases. But I do not mean to leave the impression that these are all that are so transmitted. Time will not permit to take up others in detail, but, in order to bring the subject up for a fuller discussion, permit me simply to name a few more. Asiatic cholera and bacillary dysentery bacteria are both harbored in the human alimentary canal, and are transmitted by the feces very much as typhoid fever. Diphtheria, epidemic cerebrospinal meningitis, pneumococcic pneumonia, bacillary influenza and a variety of streptococcic infections are also carried by human carriers and directly transmitted to others.

The bacteria are harbored in the mouth, the tonsils or the nasopharynx of the individual who may be a healthy, chronic or convalescent carrier and disseminates them by the acts of talking, coughing, sneezing, etc. Yellow fever and dengue, like malaria, are transmitted by contaminated mosquitoes who must in turn obtain the bacteria from sick human beings. Such diseases cannot be transmitted in any other way, unless it would be by drawing the blood from the sick individual during the first three days of the illness with a hypodermic needle and injecting it subcutaneously into the healthy.

Typhus fever and trench fever, both quite prevalent during the recent world war, are transmitted by certain species of body lice. As yet no one has been able to discover the responsible bacteria in either disease, but it is believed it be a filterable or ultra-microorganism, and the lice depend upon the human sick for their supply.

Rocky Mountain spotted fever is also a disease of considerable importance in some of our neighboring states. It is trasmitted to the human being by a contaminated tick. This tick gets its supply from sick or dead domestic or wild animals, such as the ground squirrel, chipmunk, ground hog, ètc. The etiologic bacteria of this disease are also still unknown, but we have good proof not only that this disease is an infection, but also that it is contracted in this way.

In certain sections of the Southern states from 40 to 60 per cent of the inhabitants are infected by the hook-worm. This parasite must ovulate within the human alimentary canal. The eggs then find their way into soft soil with the feces, where the worm develops. After maturity the hook-worm gains ingress into the body by burrowing thru the skin, usually the feet of barefoot children. Gaining access to the blood, the worm finds its way to the lungs, later into the stomach, where again it ovulates, the circuit being completed by the aid of a human carrier.

I shall refrain from enumerating more examples, but wish to emphasize the immense truth that bacteriology, tho one of our most recent natural sciences, has done much for humanity, not alone in an economic way, saving human lives and vast fortunes; but it has done more by changing man's conception of the universe, giving place to reason and logic, where ignorance and superstition formerly held full sway. And in view of the fact that today we are becoming more and more conscious of the importance of preventing diseases, and learning more and more how to prevent their spread, it would seem logical that the medical profession as a whole, not only sanction but demand a more liberal dissemination of such knowledge. Such scientific truth could be more generally taught in our public schools, and with profit replace present subjects less essential. More simple scientific instruction of facts concerning the causes and manner of spreading communicable diseases by carriers would be a step in the right direction, and could also do much towards eliminating the evils and vicious influence wrought by our present-day cults.

SOCIALIZED MEDICINE IN NORWAY *

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In order to understand properly my remarks about socialized medicine in Norway it is necessary that I give you as a proper background some idea of the general political conditions during the last years preceding and after the great war. As with so many other things, so also politically did the last war cause changes in Norway. Altho not actually involved, this country was so near to the theatre of action that very pronounced, deep-felt changes were brought on in the whole economic as well as the intelectual life of the nation.

The Norwegians have always been a rather conservative people, the main political parties being Right and Left, the Rights representing the more aristocratic adherents to the old conservative regime, the Lefts on the other hand being more progressive, radical if you can call it so. Besides these parties there sprung up during the last fifteen to twenty years a new party, the Social Democratic, whose platform was more radical than the Left's and whose adherents were recruited mainly from the rank and file of the labor unions and the so-called radicals. In the beginning the views these radicals held and worked for were very far away from the propaganda made by the present day ultra-radicals. Neither were they very numerous or powerful. However, all this changed after the war.

Norway, as you all know, is very closely situated to soviet Russia and influence from here was soon felt stronger and stronger. The peaceful, old-type radicals under this influence were gradually changed to a raving mob of bolshevists, who set in action a most active and vicious propaganda for their ideas, one which fell in particularly fruitful soil, prepared by the postwar industrial and general business crashes, with deflation of values and consequent rising in the price of all commodities. The bolshevist idea, therefore, soon spread everywhere, and what made it so much more serious was the fact that the leaders were men of high intelligence. In other words, the communist and bolshevic movement in Norway did not stop with the working classes, the floating drifting population, which we mainly have in this country. Among them we see there men and women of the highest intellectual class, to a great extent academically educated people, their present leader being a professor of history at

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the old and only university. In the last Congress or Storthing, as it is called, they have been able to elect thirty-two members from their own ranks out of one hundred and fourteen which means practically one-third. A large proportion of their contingent make yearly trips to the great soviet congresses in Petrograd and Moscow and are all the time in intimate communication with the Russian soviet leaders, from whom they get direct orders and advice concerning the home propaganda.

There is not much "soap-box" oratory in Norway, with empty high ringing words and veiled threats. The leaders have long since realized that their principal avenue towards attaining their aim is thru the polls and their representation in the parliament and county and city administrations. They have, therefore, from time to time been able to carry thru a number of laws which gradually are threatening to socialize the whole nation.

There is a pension law for old age, assuring every person over a certain age a pension from the government till he dies, providing he has no means. An employment law assures everybody out of work, belonging to some labor organization or other, a large percentage of his wages during his time of unemployment, paid by the state. Of particular interest to us is an accident act, something on the same order as ours and working in about the same way, providing for accidental injury. There is a sick insurance act which is of considerable more far-reaching consequences. It provides for insurance in case of sickness which means sickness of all kinds from colds to abdominal operations and even including childbirths. This bill was not so far-reaching when first passed some ten years ago and immediately put into operation. Later on, particularly during the last five years, it has been modified and amended to its present far-reaching consequences. Every man and woman over fifteen years of age, working in the employ of others, especially laborers, skilled and unskilled, but also office people, clerks, public service men, maids, servants, smaller trades people, farm laborers, etc., in short everyone whose income does not exceed 6000 Kroner a year, comes under this insurance.

In American money 6000 Kroner does not mean much over $1,000 at the present rate of exchange, but actually it means much more over there than $1,000 would here. I can assure you that not very many laborers or even men in official positions get a great deal more in yearly salary and the majority not so much. So such a maximum in reality means practically all the great middle class of people.

Out of this and closely connected with it has developed the so-called "Kredssyge Kasser," corresponding somewhat to our sick benefit societies, only they here are under government initiative and control. There is usually one society in each town, several in the larger, and one in each district in the country, all connected and directed in common from a central organization located in the capital, Christiania. Each society makes its own contracts of fee schedules with the different doctors in the community and a list of all the medical men under contract is published, so the members can then make their own choice. There is also provision for specialists and consultants, all to a definitely fixed schedule.

The expenses are paid thru the government out of a fund created from four sources. (1) The employer pays one-tenth, (2) the government, one-tenth, (3) the local city or county government in which the sick benefit society is located pays two-tenths, (4) the insured person pays six-tenths in the form of an insurance premium, ranging in six different classes, according to his income and the kind of work he or she is employed in. According to the class their premiums amount to from 50 to 110 ore, which means in American money from about 8 to 15 cents a week. For this the insured gets free physicians for all kinds of sickness, with free choice of practically all the medical men in his community, together with specialist's help and consultations, if needed. He furthermore gets free hospital and while there free medicines, dressings and surgical operations. In maternity cases the mother gets free delivery, hospital, if needed, and eight weeks maternity money, while an ordinary case gets approximately 60 per cent of his wages for full time of sickness.

What are the medical men getting out of this law is the next question for discussion. This system has naturally to a great extent minimized and in many cases completely excluded the private practice of the physicians. In a general way I can safely say that it is only the older, well-known men, University professors, specialists and doctors in rich communities, who still have any private practice left. The young men who are just starting out and the average general practitioner must rely almost entirely on his practice from the different societies and, as most serious illnesses and surgical cases go to hospitals where treatment and operations can be had by the closed staff, free of charge, there certainly is not much chance for the young man who is ambitious to follow his cases and do surgery to develop himself. As a consequence it is customary and absolutely necessary for a man, who wants to specialize for instance in surgery, to join some of the public clinics as a paid assistant, and work there for years for a very meager salary. From his private practice alone he will surely not get the surgical cases necessary to give him experience and dexterity.

On the other hand, however, a man with an extensive contract practice, can make a very good living out of it, altho from a scientific standpoint it is not very interesting work. In Christiania, for instance, there are several men who make as high as 40-50,000 Kroner, the average being 15-20,000 Kroner which gives one a very comfortable income. Besides this the money is always certain, being paid directly from the different societies at stated intervals.

During the war there was a shortage of medical men and as a result everybody was busy working overtime and making a great deal of money. In some districts there were even no doctors. The government was, therefore, obliged, much against old custom, to import men from other countries and grant them licensia practicandi. There were men from Sweden, Denmark and Germany and they are still practising. In the first years after the war this all changed. There was suddenly a large influx of medical students. The fact that private practice was gradually getting more and more scarce did not frighten them. Neither did the socialization of medicine, transforming practically all practice to contract work keep them away. On the contrary, in 1920 there were graduated nearly one hundred medical men, while in 1921 it was reported that almost five hundred new students enrolled in the medical department. The old auditorium, which in former days had been standing two-thirds empty, was soon filled to overflowing. I heard from numerous sources when I was over there that the students in order to get room for the lectures had to be there hours in advance and often then did not get room.

There is in Christiania, which is a city of 250-300 one doctor to approximately 4,000 individuals and in many of the smaller towns only one in every 1-2,000. The number of medical men is, in spite of all occurrences, gradually leveling out these figures, and it will surely not be very long before in Norway they have a real medical proletariat with practically all of them on a starvation income.

The Norwegian Medical Association is quite a different affair from ours in some respects. Among other things it is one of the strongest unions in the country, as practically every medical man must belong in order to be able to get work. The organization fixes fee schedules and supervises contracts, all of which must be approved by them and passed before the local doctor can accept them. And many times rather than give in it has boycotted a whole district for contract medical service. A year ago, when the old contracts were up and new ones were to be signed, there was a bitter fight on between the medical men and the leaders of the sick-benefit association who wanted a general reduction of all fees. This was strongly opposed by the doctors and a sharp polemic war went on in the daily press, where all public things usually are aired thoroly and unmercifully. As the opposing parts would not give in, the medical association simply struck and instructed all its members all over the country that from a certain date no one would be treated except as private-paying patients. People soon got tired of paying a doctor personally, when they lawfully should have him free, and raised such a rumpus, that after a few weeks the leaders of the benefit associations had to give in and sign the contract after the schedule prepared by the doctors, which shows what could be done, even here, if we as a class only would stick together.

My personal views on these matters should not mean so very much to anyone. My interest is by inclination not along the lines of social development. Therefore, my observations have not been very exhaustive. My investigations have merely been the consequence of the curiosity a native-born son naturally would feel for the doings and developments along his own line of work in the country where he was born, compared with similar developments in his adopted country.

In conclusion I can only say that, having talked freely both with patients and with a great number of doctors, my impression is that the law has worked well and has been a blessing to the great mass of people whose income is small and who usually have nothing when sickness comes and a doctor is needed. Also the medical men have been satisfied on the whole. Their contracts and fee schedules have, thanks to their medical associations, been good, giving most of them a good living income.

DANGERS WITHIN THE MEDICAL FRATERNITY *

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In speaking on the above subject I wish it understood that I am trying to place myself outside the pale of active practice, and to become a mere spectator, yet one who has been trained within the medical fold. Experience is a great teacher and in its school we learn many things which are not mentioned in textbooks. In fact, the science of medicine and surgery could not have arisen but for the dissemination of the results of experience. Its teachings are oftimes doubted by the younger and fresher minds coming into the field, and I often rejoice that this is true, for it is only by such testing that experience grows.

No advance could be made without experiments, and the physician is a true protestant. His training and state of mind make him a natural doubter. He accepts with hesitation all new ideas, and usually waits until sufficient proof has been deduced before he makes up his mind. That is the attitude of the true scientist. If it were not for that doubt in his mind no real scientific advance could be made. Draper, in his "Intellectual Development of Europe," brings out the fact that medical men were the first real scientists, and it was because of their inclination to doubt every proposition that came before them, and to seek for proof or its opposite before accepting or rejecting it, that advancement came.

While this matter of doubt is essential to scientific advancement, yet it also has its bad effects on the individual in his relation to his fellow worker. It causes him to appear to be antagonistic to every new idea that is advanced, and oftimes to those who advance it. I know of no set of men who so persistently ask the question "why" as do those of purely scientific training. Among medical men this attitude is quite common and reacts on human relations as well as on abstract ideas. It is oftimes hard for such men to differentiate between the facts discovered and the individual discovering them.

This state of affairs makes the physician skeptical of everything he hears unless proven beyond doubt, and even applies to his relations with his fellow worker. I have no doubt that every one of you has at times felt the inclination to question the opinions of your colleagues and, if you are at all impulsive, you may have expressed that doubt where it would do harm. It is all right to doubt, but it is only human courtesy to refrain from expressing it before those who do not understand. Such things can only do harm to the profession. Among our fellow practitioners it is right to express our disbelief, but in a courteous way. It is the lack of this courtesy which hurts not only the individual, but reacts upon all physicians as well.

I have in my mind a case in point. A young physician called an older practitioner in consultation over a case of old fashioned quinsy, in which there had been a severe hemorrhage. The older man placed a small vial of tincture of aconite in his pocket before starting, thinking it might be used to lower blood pressure and thus help the styptics which he had a reason for believing were being used. But the young man declared before the family that aconite was not indicated and threw it out of the window.

Such a lack of courtesy is the cause of many a heart ache, and no one can blame the older man for never again accepting the role of consultant with that physician. The hurt was not only to the older man, but raised a serious question in the family, and had a tendency to destroy all confidence in the medical fraternity. There can be no doubt that the young man thought he had "put one over" on his colleague, but did he? The result was that the next time the young man was in need of help he did not get it, and thus his own discourtesy reacted upon himself. Every practitioner comes to the time when he needs help, and if he is constitutionally discourteous, he will find himself isolated from all his companions in the noble art of practicing scientic medicine. I might cite case after case of discourtesy to prove my statements, but I do not think they are needed, for each one of you can substantiate the facts for himself.

I realize that it is a hard matter to keep from forming opinions as to ability of our fellow men, but we should not allow that to seal our minds to whatever truth they may have to impart. A truly great man is too busy forming his own ideas to be influenced very much by the personality of his colleagues. Prejudice, therefore, is only a hindrance to our best work, and must be laid aside if we are to attain more than a moderate success. It does not pay to form judgments too quickly, for we may be the one who is in the wrong. We cannot help forming opinions, and in the long run those opinions become judgments, but they should not be formed too quickly nor interfere with justice. Dr. Banting of insulin fame was but a common practitioner of Lon-

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don, Ontario, when he got hold of an idea which has revolutionized the treatment of glycosuria. Judgments formed of his ability while still in London would seem absurd today. Yet how often do we hear expressed ideas of our fellow practitioners, which are as unjust as early statements about Dr. Banting would have been.

The attitude of the scientific mind is one of receptivity, of careful analysis and slow judgment. Then we should pull off the blindfold of prejudice or prejudgment, and allow the light of truth to penetrate our minds, for personal likes and dislikes can never help to solve the riddles of life, and our time here is too short to spend in the closet of self-adulation, surrounded by the ghosts of our own errors.

Egotism is another thing which hinders more than it helps. The school boy who must be captain of his school troop or he will not play may succeed in life, but it will be on account of his natural ability rather than his egotism. Self-esteem is essential to every man's comfort in life, but it should not be allowed to ursurp the place of reason. We are obliged to live with other people, whose good will we desire and whose help we need at times, but if we become so egotistical that we become offensive with it, our relations with others will be made uncomfortable. The truly egotistical man is blind to his own faults, and uncompromisingly sensitive to those of his colleagues. The enemies he forms are personal and oftimes vindictive, and the personal element is the big thing in the practice of medicine as well as in other walks of life. Without a pleasing personality no man can expect to rise above mediocrity in his profession. Self-conceit and egotism are twin brothers which have wrecked many a promising career.

Another evil which besets all human relations is selfishness. It is so ingrained in human character that it is very hard to get away from, and yet, in dealing with desperate maladies, self must be laid aside or we are not worthy to be called physicians. I remember a case where an older physician was called in consultation and to assist in a difficult operation. The younger man, fearing that some error of his might prejudice the case, asked the older man to operate for him, but he absolutely refused, laying aside his own selfish will, and stood by ready to assist with advice and his moral support. The operation was a success and helped the profession in that locality, while it helped to build up the confidence of the young man, not only in himself but in the character of the older man's advice as well. It would have been selfish for the older physician to have accepted the scalpel, and he was big enough to see that it was the best for the profession that his young colleague be not supplanted.

The relationship of a physician to his fellows in the profession is one of a peculiar character, and should be handled with care so as not to break down the confidence of the public. Personal gratification ought to give way for the simple reason that any disrespect thrown upon any reputable member of the fraternity always reacts upon the whole profession. Every physician should be treated as a gentleman, until he proves himself unworthy. The man who tries to undermine the reputation of a colleague lays himself open to the accusation of selfishness, and is apt to find himself treated as a boor, not worthy of the high standing which his professional position ought to give him. A momentary gain is often sought for, when it were vastly better to forego it, because such things belittle not so much the man as the profession itself, the man who uses such an advantage being too little to see the point.

It does not matter how thoroly you may have been educated yourself or what degrees you may have taken, you may even then fail in the practice of medicine. Success depends upon many things and education is only one of them. I knew a physician in the East who was the best read man in his city, and yet he could not make a diagnosis at the bedside. Tell him what the disease was, and he could tell you everything that had ever been done for such cases. His judgment was at fault and he was a complete failure. He finally drifted into a sort of partnership with two other physicians who were very busy men, who used him as a sort of quick reference. He stayed in the office and read all the new books and magazines, giving them the latest things found in them.

I wish to speak of another thing which is revolutionizing the medical world, the commercializing of the art and science of medicine and surgery. At one time in the near past medical men were on a higher plane of social standing than they are today, and it is not hard to understand why. Then the medical man was set apart from the community as the representative of learning, as a man whose heart went out to suffering in a helpful way, no matter whether there was a money consideration or not. He was like the "old fashioned doctor," so wonderfully written about by Ian Maclaren. He was a humanizing element in the community and looked upon his patients as his special charges, whether rich or poor. It is needless to say that he was usually poor himself, because he lived among a poor people, and naturally became the helper of the afflicted in his district. He was loved for his kindly disposition, his untiring service and his homely advice. This homely, wise and helpful man held a place in the hearts of his people which few occupy today.

How different the picture now. Money and more money is being wrung from our patients at every turn, and it is no wonder that the people are turning away from medical men as an influence for the humanizing of society. It has come to such a pass, with our trained nurses, special hospitals and so-called experts, who are usually only expert in one thing, that it is a great luxury to be sick today. The laity are losing confidence in our medical men as human beings, altho they do consider them as wonderful examples of expert knowledge. I know from personal experience that the successful physician even today is one of the most philanthropic forces in his community, and treats many a case with no hope of reward, but the tendency is to make it very uncomfortable for such patients. In the past the medical man was too busy treating the ills of humanity to become a good business man, while today the effort seems to be to make the business of medicine come first.

What the outcome is to be I do not pretend to know, but that there is a great change in the doctor's standing in the eyes of the common people is self-evident. I wish it understood that I am not criticising in the above, for it may be for the best in the long run for all concerned, but I am trying to look at the profession from an outside angle, and I feel that it is wise for us to understand what the laity think of us. That immense changes have come in our knowledge of the human body, its diseases and their treatment in the past thirty years goes almost without saying, but we must not become so puffed up with this knowledge that we cease to be human, for we must live amidst a very human people, who have all the weaknesses to which humanity is subject, and if we allow ourselves to become mere machines, we will lose touch with the best there is in mankind.

It has been said that the physician sees the back-door of life, and in a certain sense it is true, but what an opportunity that gives to all of us of coming into closer touch with the best there is in our patients. Hearts are laid bare for our inspection, the closest skeleton is displayed for our benefit, and the utmost confidence is reposed in our discretion. If there is any one who comes closer to the innermost life of humanity than does the family physician, I do not know who it is. And right here is where personality scores its greatest victory. Fortunate indeed is the doctor who commands the love and respect of his patients after the danger is over. The opportunity that is given the doctor to win eternal gratitude is greater than in any other profession, and he who fails to do so has failed to rise to his opportunity. I know a physician who is almost a model in this respect, and who, in spite of his one weak point, is loved and venerated by all whom he serves. I recently heard of a patient of his who stated that she would rather hear him swear than to hear most people pray. It is that feeling of utter confidence which makes him supreme in his position as a family physician. After all, the things which really count in this life are not so much knowledge, much as that is valued, or success commercially, as the ability to win a loving confidence which follows us on the long winding trail to that far country to which we all are traveling.

In closing, I wish to emphasize the need for cooperation among medical men of all classes. By standing together much good can be done and there is great need for holding a firm front towards unscientific medical ideas. The professional realm is being invaded by quacks of all sorts, and many false ideas are being spread broadcast by ignorant and designing men who, knowing nothing of the necessities of real medicine, are capturing the fancy of those more ignorant than themselves. The host of so-called systems of practice which have arisen in the past, flourished for a time, and then faded into obscurity, is but an evidence of the need for all true medical men to stand shoulder to shoulder against their encroachment. The public knows nothing of the great principles upon which medical practice is based, and therefore is easily mislead by shrewd and designing persons to the detriment of all. Facts and not theories must be the basis of all scientific knowledge. But, owing to the misunderstanding of the public, medical men are handicapped by numerous isms and cults which react upon them and confuse the real issues before us. A little more patience in explaining in plain terms to one's patient just what is his or her trouble, and a more comprehensive effort on the patient's part to understand what is being done for him or her will oftimes make for a satisfying relationship between patient and physician, and cut off the opportunities, too frequently left, for the insidious penetration of quack ideas.

The public needs to become educated as to the true value of medical knowledge and practice, and I know of no one who can do more for them than the family physician, if only he be honest and trustworthy. The unfortunate thing which causes unrest and doubt among the laity as to the value of their medical adviser's opinion is that they hear so many conflicting statements from thoughtless advisers that they do not know what to think. The fact that medical men do not agree upon what should be done in any given case, that individuality plays such a great part in the opinions of men cause many thoughtful people to doubt the statements of all. This state of affairs calls for the wisdom of a Solomon to counteract it, and unfortunately there are few such men with us today.

MORBIDITY IN MATERNITY *

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In view of the fact of the decreasing birth rate, both abroad and in our own country, even in our own state, it is well to consider the underlying reasons back of this, face whatever facts may arise, and answer them honestly. There are three certain factors greatly influencing our family life which especially affect the lives of mothers who bear the brunt of the development of children and who are our greatest concern.

1. Economic. In this day and age, the economic standing of the average individual does not allow him to rear a large family, giving full advantages to all.

2. Social. The calls of pleasure, easy life and the duties to society, as contrasted with the burden of producing and rearing a family, have a great bearing upon the psychology of the average young woman.

3. Physical. The discomforts of pregnancy, the agony of labor and the danger of impaired health and impaired physique follow her the rest of her life.

These three are determining factors which are becoming more and more pertinent in the development of our race.

This paper is to deal only with the third, with the endeavor to point out that the lessening of pain for the average sensitive civilized young women, who make our best mothers, has great bearing and when conducted painstakingly will produce for us happier, healthier mothers and happier, healthier babies.

Every young woman who faces the probability of confinement should have the assurance (1) that she shall go thru the procedure alive, (2) that she shall give birth to a live baby, (3) that she shall be well, (4) that her baby shall be well, (5) that she shall be freed from pain, that is, protected from the discomforts of gestation, alleviated from the agony of labor and directed thru her puerperium and the year following in such a manner that she shall retain her girlhood physique, be even stronger and healthier because of her experience.

There is a certain amount of inescapable discomfort during maternity which comes to every mother and is practically universal in varying degrees; the annoyance of increasing size; bearing down, groin pains, bachache, leg and foot cramps; labor pains, which vary from almost no discomfort to extreme agony; weakness following the immediate puerperium; relaxed abdomen with its stretched skin, diastatic muscles, and so-called "pot belly." Altho not included in the above, there should be made mention of the ever present nemesis of eclamptic conditions with all the accompanying discomforts and double danger to mother and child.

It was never more necessary to offer assurance to a young prospective mother and give encouragement and buoyancy of spirit during the period of gestation and labor than it is now with our statistics of diminishing birth-rate. The calls are becoming so urgent to the highly educated young woman of today, to withdraw from home privileges, and instead answer the demands of social obligations and continue its pleasures.

Probably the average young woman comes to her first experience in active motherhood without the slightest knowledge of what it is to mean to her, and every physician has heard from time to time those same young mothers say that they had rather die than go thru the experience of labor again, and we have all seen them carry that out to the bitter end. That is not due to a fault in the method of perpetuating the race. There is no opportunity of changing that, but it is due to the indifference of the ordinary practitioner to the pain, distress and actual agony of the average mother during confinement. Recognition and correction of this will mean

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healthier, happier mothers and healthier, happier babies.

Antepartum. It is a matter of experience among practitioners, also of vital statistics, that the expectant mother is not only entitled to, but should receive careful attention from the time of conception to the onset of labor. When labor begins, of course, his attention is called to the case. That is not sufficient. She must receive careful supervision thruout gestation. Many of the discomforts attendant upon the enlargement of the uterus may be relieved by well placed advice and direction. One should consider the fact that practically all mammals carry their young upon their abdominal muscles, a woman on her pelvic bones, with resultant bearing down, groin pains and cramps. Direct her to spend half hour periods on hands and knees on her bed, reading. By this simple measure she can relieve herself of much of that discomfort.

The average woman is watched primarily to guard her against eclampsia, which is as it should be, but if every woman be given a thoro physical examination so soon as she announces her pregnancy, many salient points which have great bearing upon the course of her particular gestation will be revealed from time to time. These will be of inestimable value as the pregnancy advances. This initial examination should include certain points known to conceal often times pockets of infection. Mention should be made in particular of the teeth. These should be cared for early in gestation by an excellent dentist, all infection being mercilessly eradicated.

Concealed infections are recognized as contributing thru the blood stream to remote places serious foci, which have their inception in tissues whose resistance has been lowered temporarily, as will be found in the pelvis after hard labor or even short precipitate ones, resulting in phlebitis, cellulitis and placental infarcts, with all their accompanying morbidity. These instances of morbidity can and should be reduced to a minimum by early recognition thru thoro examination as stated above. Tonsils should be regarded. The functional state of the mother's thyroid must be considered, especially in this state where we are having a fairly high percentage of newborn infants with goiter, nearly 10 per cent in my own practice.

Examination of heart, lungs, kidneys and pelvic measurements are too common to mention. Urine examinations, blood pressure readings and weight records must be taken frequently, the two former more and more often as time of delivery approaches. These are our most common methods and our most commonly reliable ones to detect the onset of the gravest toxemia of pregnancy. They are, however, not absolutely indicative in the absence of clinical symptoms. There are instances of fulminant eclampsia, in which neither urine nor blood pressure findings give warning of impending danger until it is nearly present.

Also, one will see instances of high blood pressure, 200-220 systolic, with slight urinary findings, minor clinical symptoms and the patient continuing a normal course thruout. Again one sees a woman with very slight rise of blood pressure, 135-138, urinary findings nearly normal but with severe clinical symptoms and even death. Here blood chemistry becomes a reliable adjunct. Therefore, whenever urinary findings vary from the normal or blood pressure readings are consistently rising, or clinical symptoms alone supervene, it is imperative to make blood chemistry determinations and act accordingly. I cannot lay too much stress nor sufficient emphasis upon the importance of careful watching of prospective mothers during the period of gestation. It will mean numberless examinations for no reason whatever, but it will give the obstetrician greater familiarity with the subject and develop within him a growing keeness for the perception of morbidity which many times results in serious menace to life and prolonged morbid state, but when conscientiously conducted, the sure end results will be happier, healthier mothers and happier, healthier babies.

Intrapartum. When the occurrence of labor approaches, the outstanding general morbidity is pain, with its short or prolonged duration, and its exciting psychologic factors thru all the stages of mild to extreme exhaustion, mentally and physically. It is to be hoped that the day is near at hand when it will be possible to accurately measure pain, putting its amount of spent force into concrete terms. Then will the parturient woman come into her own. Labor is called, and rightly, a surgical condition, but no surgical condition receives so little consideration of the pain always accompanying it. Nearly every physician states he gives relief "when necessary." That so-called "necessity" has no standardized element and almost invariably is absolutely and positively inadequate for the actual suffering.

Never was there greater need for painless labor. Shock from the pain in her labor, to a highly civilized, sensitive young woman, must be considered in labor mortality as well as morbidity, with the child as well as with the mother. This is a fact, not a mere sentimental theory. Statistics are becoming voluminous concerning the beneficial results, and showing increasingly favorable regard for those measures which give uninterrupted relief thruout the period of labor. Nearly every drug and means that have been used to deaden pain, quiet nerves or anesthetize patients have been tried to the limit upon the delivering mother. As was mentioned above, statistics are beginning to show that the variety of means giving uninterrupted relief are producing the best end-results. Anesthetics given with gas-oxygen, ether or chloroform are best reserved until the latter part of the second stage. This statement is made in view of the fact that many men are getting good results from gas-oxygen thruout even the first stage. But the best results statistically and from my study of the different methods, are in the method of the so-called "twilight sleep."

The ideal procedure to be desired is that the mother should be unconscious of her distress; that labor progress naturally, without inhibition or retardation; that the mother shall not suffer from any effects neither near nor remote; and that, on the part of the baby, it also shall not suffer from the effects near nor remote. This scopolamine-morphine, or any of the opium derivatives treatment, apparently comes nearer to those desired results than any other method known. Statistics are plainly showing that no harm comes to the mother neither early nor remote, nor to the baby, but rather it is beneficial to both. That there are certain disagreeable effects are to be honestly faced, such as occasional slowing of labor in the first stage, at times a wildness on the part of the mother during pains, and a certain amount of oligopnea on the part of the infant. None of these, however, concern the safety of the mother nor child but rather the feelings of the physician in charge. They add to his discomfort and emphasize the necessity of his being present to assist in the conduct of labor, which does not appeal to the average physician, for his direction ordinarily to the obstetrical nurse, whether in hospital or home, is to call him "when any bulging appears." Consequently the real reason for the nonrelief of this morbidity is brought home to the neglect and lack of interest of the average physician.

Polak, in his studies of the scopolamine-morphine treatment, reports that in one thousands births under his care, given the best that this excellent obstetrician can afford, there was a fetal mortality of forty-seven. He then reports one thousand other cases, who were given the greatest amount of relief possible during their labor, with a fetal mortality of twenty-five. Mosher, of Kansas City, also has equal results. Of late a report has come from the Barnes Hospital, St. Louis, where the medical students are taught the scopolamine-morphine method, that their infant mortality has been reduced fifty per cent, contrasting two thousand births without assistance and two thousand with alleviation of the mothers' pain. Under the ordinary method of delivery, at its completion the mother is distraught and exhausted from her agony and extreme propulsive efforts. The most striking fact of the use of the scopolamine-morphine method, however, is the remarkable absence of shock and exhaustion in normal cases. The refreshment present when consciousness has returned is nothing short of spectacular. Measures to relieve labor pains should be administered merely to reduce infant mortality, but it is a pleasure to realize that one has had the privilege to assuage a young mother's inescapable agony. Even that has its value in the human equasion, and the expected results are happier, healthier mothers and happier, healthier babies. These are potentially our nation's assets.

Postpartum. The first consideration given the ordinary lying-in period is that it should not exceed the time-worn term of ten days, and as much shorter as possible. No one knows why the delivered mother should get up on the tenth day rather than on the ninth or eleventh. But some short sighted individual may in the past have instituted that dangerous custom and a very large part of our women today are suffering on account of it. Hirst states that out of every one hundred operations for all conditions on men, women and children, sixty are on women because of child birth. There must be something wrong somewhere in our conduct of the child birth period, when such startling conditions are faced. He has found that by keeping his patients confined to bed about five weeks, gradually getting them up and about at the completion of the sixth, he has eliminated his operative necessity to a marked degree. And why should not this be?

At the completion of labor the uterus weighs about three or four pounds, which gradually shrinks down, reaching its normal size about the sixth to eighth week. Its ligaments have been stretched to some treble their ordinary length. The vaginal canal has been stretched and strained to a point of paralysis and a large percentage of times torn, either in its extent or at its outlet, from which it does not recover under two and possibly three months. Why should not one expect, then, the ills which we are constantly meeting, when we consider these conditions and that a woman gets onto her feet ten days after delivery, with her soft relaxed organs imperfectly suspended over a canal unable to offer any support. Unfortunately the maximum discomforts and far reaching incapacitation do not occur until months, often times years, later. These conditions should be studied, faced honestly and firmly, that we may have healthier, happier mothers and healthier happier babies.

Much can be done to obviate surgical conditions and sequelae by beginning knee chest positions so soon as the patient is getting out of bed and continuing them until the uterus has returned to normal size. This position should assist the uterus to come into its normal condition as to flexure and location in the pelvis. Again, the "monkey trot" of Polak or the "kangaroo gait" of Potter will rectify a certain percentage but not all, and surgical measures are necessary.

A further morbid state which every mother faces who has given birth to two or more children is the repetition of the extreme stretching of the abdominal muscles to accommodate the growing organ. As a mother advances in age and in number of full term pregnancies, she develops what may be termed vulgarly as "pot belly," caused by the overstretching and separation of the recti muscles, together with a similar condition occurring to the oblique and transverse muscles, to a probably lesser degree. The girl-like form she had before marriage and her family began is lost, and futile attempts are made to rectify this by close fitting garments and corsets, resulting in a very large percentage of grotesque figures, to which we are all accustomed. To the eye of every one a well formed figure is pleasing, and with proper care, instruction and intelligent response by young mothers it is possible, unless the pregnancies are too close together, to shorten and strengthen these muscles and continue the pleasing conformity and shape which nearly every girl possesses in youth. This not only produces comely figures but stronger, sturdier, happier and healthier mothers with resulting healthier babies. It can be obtained by graduated exercises taken by the mother religiously every day, and when explained to her in particular that her form and beauty are at stake it is remarkable how many are willing and even eager to take up the exercises, and carry them thru every day, according to instructions, for at least one year.

In summary, I would emphasize, to reduce the morbidity in maternity it is absolutely necessary:

1. That the prenatal care should be painstakingly and increasingly thoro as time of delivery approaches.
2. That relief from pain should be given in labor, and the reduction of morbidity during this period; also mortality for the infant is in proportion to the amount of relief from pain given the mother.
3. That the conservation of the health by preservation of the physique of mothers is necessary with advancing civilization.
4. That the lowering of all morbidity and mortality means happier, healthier mothers and happier, healthier babies.

THE PUPIL IN HEALTH AND DISEASE *

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The importance of the condition of the pupil as an aid to diagnosis is well recognized by all, and not only will its careful study help to clear up many cases of doubt for the nerve specialist and the eye, ear, nose, and throat man, but for the general practitioner as well. The purpose of my paper is not to try and teach, but rather to stimulate a more careful study of the pupil and its relationship to health and disease.

To prove my statement that the pupil is of much importance as an aid to diagnosis and prognosis to the general practitioner, I feel I need only to state that Cort claims that "in any serious attack of diphtheria failure of the pupils to react to light indicates a fatal termination," or that Wilson says, "sudden unilateral mydriasis in which the instillation of a drug can be excluded, is worthy of a careful study of a possible early symptom of lateral sclerosis of the cord and that inequality of the pupils, altho the reaction to light remains, is present in many cases of exopthalmic goiter." And, again, Bichelonne believes that "unilateral mydriasis is an important sign in the early diagnosis of tuberculosis."

Geometrically speaking, the pupil is situated slightly to the nasal side of the centre of the cornea. To the eye it appears absolutely black for the reason that no light is reflected from the retina, and it becomes red in color only when the interior of the eye is made the source of illumination, as in an examination by means of the ophthalmoscope. The reverse of this condition is found in the albino,

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* Read before the Thirty-fourth Annual Meeting of Washington State Medical Association, Spokane, Wash., Sept. 20-22, 1923.

where we explain the luminosity of the pupils by the fact that the light passes not only thru the pupil, but also thru the unpigmented iris and even thru the sclera, when we get not simply a limited district of the retina but the whole fundus flooded with diffused light; and rays from the different portions of the fundas pass out of the pupil in every direction and can readily be caught by the observer's eye.

That this is the correct explanation can be proven by the fact that the pupil of an albino's eye looks black as soon as we hold before the eye an opaque screen, having an aperture that corresponds to the size of the pupil. This shuts out from the eye light which might enter thru other media than the pupil, and in this respect makes the eye of an albino like that of a normal person. Albinotic eyes contain the pigmentiferous cells of the uvea and retina but they lack the pigment. There is apt to be an absence of pigment of other parts of the body, of which the cause is unknown, and the failure of the epiblast to form pigment cells is unexplained. According to one authority, heredity seems to play little part, yet I recently saw a youth, a typical albino, who has a sister likewise affected. Examination of the interior of the eye reveals nothing abnormal except the absence of pigment.

As we proceed with our examination of the pupils it will be noted that they are usually equal but occasionally the left will be found to be the larger. The pupil is mobile, being capable of altering its diameter under the influence of various internal and external causes. It admits of three variations, rest, contraction, and dilatation, all of which depend upon action of the circular and radiating fibres of the iris and their nerve supply. A condition of rest is only relative, being midway between contraction and relaxation, a condition of muscle tone, in fact, due to a reciprocal relation existing between the contractor and dilator muscles. Inequality of the pupils, or anisocoria, is always pathologic. Posey says anisocoria, altho frequently of no importance, is often a grave symptom; yet, according to a number of observers, it may occur in perfectly healthy persons or at the most who suffer from functional neurosis. In these cases it is considered transient. In this type of anisocoria, which has been termed by Prof. Fuchs a nonpathologic anisocoria, which he states is quite rare, the pupils are round and the pupillary reactions perfectly normal, a feature which distinguishes it from pathologic anisocoria. True anisocoria can never take its origin from the centripital or optic nerve fibres but is always caused by a disturbance in the centrifugal channels, or the oculi motor nerve and its centers or its connections with the sympathetic.

The mean width of the pupil differs with the individual and also alters with age. It is found to be greatly contracted in the newborn infant, soon becomes more dilated, reaching its greatest diameter at from fifteen to twenty-five years of age, and becomes the narrowest in old age. In old persons, also, the pupillary reaction of the pupil becomes sluggish, in consequence of the unyielding character of the tissue of the iris and especially of the sphincter. We must not lose sight of the fact that the vessels of the iris are of moment in determining the width of the pupil, since by their distension the iris is widened and the pupil consequently contracted and vice versa. This will be of help in explaining why in cases of inflammation of the iris we have small pupils.

How best to test the reaction of pupils to light is discussed at length by Professor Sahle in his treatise, "Clinical Methods of Investigation." He states that, with a moderate illumination in front of the patient's face, we alternately expose and then shade one eye with the hand, watching the effect of the light upon that pupil and upon the other pupil; then we do the same thing to the other eye. At the same time the patient must avoid any attempt at convergence or accommodation. If the test with the moderate light does not produce the pupillary contraction, the examination should be repeated with a dazzling light (sunlight, an illuminating lens, or a concave mirror). As the size of the pupils vary with the illumination it is best to observe them in illumination of medium density. In doubtful cases it may be of some aid to compare the pupils of the patient with those of a healthy person under the same light conditions.

The customary routine examination, as frequently made for the quantitative estimation of the reaction of the pupil to light, is apt to be incorrect, due to the fact that the differences between the effect of light upon the most delicate part of the retina, the fovea centralis or macula lutea, and upon the peripheral portions of the retina, are disregarded and also to the fact that the narrowing of the pupils by convergence and accommodation cannot be positively excluded. To avoid error Shirmer has worked out the following plan for the accurate study of the reaction of the pupils to light. Have the patient seated at a distance of one meter from a well lighted window which is not exposed to the direct rays of the sun. After the eyes have adapted themselves to this illumination, the diameter of each pupil is observed. The reaction of each pupil to light is now determined by holding the hands in front of the open eyes and then rapidly withdrawing one of them. The reaction of each pupil to light is next determined, while the opposite eye is unshielded from illumination. The reaction is more marked with the first method of examination (i. e., with the opposite eye shielded), since the exclusion of the crossed innervation causes the pupil to dilate before the reaction occurs, or at least to be more susceptible to light.

The contraction of the pupil in response to the stimulus of light falling on the retina is a reflex act, the optic being the afferent nerve, the motor oculi the efferent path, and the center being situated in the floor of the aqueduct of Sylvias. The short ciliary nerves must be regarded as carrying pupil-constricting impulses, while the pupil-dilating impulses traverse the long ciliary nerves. Optic-oculomotor mechanism adapts the pupil to the amount of light and the sympathetic mechanism transmits emotional and sensory influences. Dilatation of the pupil occurring during fear or during pain is due to the sympathetic.

Phenomenon of the Pupillary Reaction to Light. The pupil contracts when light is thrown on the retina of the same eye, giving rise to the direct reflex, and when light is thrown on the retina of the opposite eye (consensual reflex), and dilates when the retina is shaded from light. Consensual reaction is the reaction that takes place in an eye excluded from the light simultaneously with the eye exposed. It may be observed by shading one eye and having the other directed towards a bright light. Contraction should take place at the same time in both pupils in the absence of diseased condition.

The phenomenon is explained by a single center in the brain which governs the pupillary reactions. Pupillary reaction to light is diminished or absent in lesions of the reflex area, i. e., the optic nerve, corpora quadregemina, the Westphal-Edinger cell group of the motoroculi nucleus, third nerve and the ciliary ganglion. When the optic nerve or corpora quadregemina are involved, the consensual reflex cannot be obtained from the other (healthy) eye. It is absent in blindness, deep sleep, narcosis, shock, coma, epileptic and occasional hysterical attacks, also absent in tabes, in many cases of paresis and in rare cases of syphillis alone. It is absent also when the other eye is under a mydriatic or myotic.

In studying the pupillary reaction to accommodation we observe that the pupil dilates when the patient looks at a distant object and the visual axes are parallel, and contracts when the patient looks at near objects and the eyes converge. This is absent in lesions of the third nerve. It may follow diphtheria and occasionally in alcoholism.

Argyll-Robertson Phenomenon, or reflex iridoplegia, is a condition in which the pupil does not respond to light but does to efforts at accommodation. It occurs in the majority of cases of tabes and progressive paresis. It is so rare in other nervous diseases that it furnishes an important diagnostic evidence that one of these two diseases is present or impending. In these cases it is often associated with a marked contraction of the pupil (so-called spinal miosis), but is also found at times with a normally wide pupil. In case the diagnosis is doubtful the state of the pupil is often of importance, absolute iridoplegia with dilated pupil being rather an evidence of cerebral lues and reflex iridoplegia with contracted pupil an evidence of tabes or general paresis. The reverse of Argyll-Robertson phenomenon, i. e., the preservation of the light reflex and loss of accommodation reflex, occurs occasionally in diphtheria, paralysis, syphillis and myelitis. It is extremely rare.

Immobile Pupil. We occasionally see a condition when the pupil does not respond to light or accommodation, yet in some cases it may dilate slightly on irritation of the cervical sympathetic. It is met with in lesions of the optic nerve or tract or in its nucleus or in that of the third nerve. It occurs in tabes, epilepsy and some forms of hysteria fainting.

Hippus. This is a term used to designate a series of alternate contractions and dilatations of the pupil, gradually growing less in degree. These occur when the eye is suddenly exposed to the light. It is usually associated with a general exaggeration of reflexes. However, Prof. Fuchs says it is a designated pathologic condition which consists in a constant and rapid change in the diameter of the pupil. Since even under physiologic conditions the pupil never remains quite at rest, it is hard to draw the line between physiologic and pathologic inquietude of the pupil, and many believe that a genuine hippus does not exist.

Bach says hippus is a rhythmic contraction and dilatation of the pupils, occupying an average from one to three seconds, which are generally unassociated with variations in illuminations. Rarely is the phenomenon unilateral and the pupillary excursions are about equal in the two eyes, measuring from two to three mm. Bach is also of the opinion that it has no diagnostic value and its cause is unknown. Knies says it is observed in recovering paralysis of the motoroculi and is then associated with nystagmus. It is much rarer as an independent condition and is then found almost always in diseases as tabes and multiple sclerosis, in which there are found lesions in the region of the nuclei of the ocular muscles. Ball says "hippus has been noted in neurasthenia, hysteria, epilepsy and brain tumor." Normal oscillations of the pupil are often mistaken for hippus, paradoxical pupillary reaction refers to the condition said to be observed at times in meningitis, when the pupil dilates upon exposures to light and contracts upon its withdrawal.

Hemianopic Pupillary Inaction Sign. By means of this sign it is sometimes possible to determine in certain cases of half blindness whether the seat of the lesion is situated anterior or posterior to the corpora quadrigemina. This test depends upon the fact that the visual fibres in the optic nerve join the fibres of the third nerve, which control the sphincter pupillae at the corpora quadrigemina. If the lesion be posterior to this point of junction, i. e., back of the corpora, in the occipital cortex, there will be no interference with the pupillary reflex. Should, however, the lesion be situated anterior to the corpora, the reflex arc of the pupillary activity will be broken and an irregularity in pupillary contraction will manifest itself.

The test is performed best by placing the patient in a dark room, with a single source of illumination back of him, the eye not under examination being bandaged and the patient directed to look into the distance. An assistant should then moderately illumine the eye by directing light upon it by a plane mirror, while the examiner turns a narrow beam of light, reflected from the concave mirror of his ophthalmoscope, upon the different parts of the retina, and closely observes the effect upon the movements of the iris.

The Cerebral Cortex Reflex, or Haab's reflex, occurs when the patient, sitting in a dimly lighted room, and, on thinking of a bright light, the pupil contracts. The test is made as follows, as described by Haab. If in a room illuminated only by a lamp or candle flame, the light is placed so that it will shine laterally into a person's eyes, while he looks directly forward into the darkness, a marked contraction of both pupils takes place whenever the attention is directed toward the light, with no change in the position of the eyes. As long as the attention is directed to the light and fixation of the eyes on the dark wall maintained, the pupils remain contracted, but as soon as the attention is transferred to the point of fixation they dilate, altho the quantity of light entering the eye has remained constant and all movements of accommodation and convergance are excluded.

Lid Closure Reflex, or Gifford's reflex. When the lids are forcibly closed, the pupil contracts. Gifford, of Omaha, inserts a lid speculum and tells the patient to close the eyelids when the pupil contracts. The test is valuable to determine whether the sphincter of the iris is paralyzed. This phenomen was discovered by Von Graefe and improved by suggesting the inserting of the lid speculum by Gifford.

Two remaining reflexes, the sensory and psychic, both cause dilatation of the pupils by stimulating the sensory nerves, by tickling or pinching the skin in the former, and certain mental states, such as terror or anger under the latter.

The State of the Pupil in Blindness. When both eyes are blind from a lesion affecting the retina or any part of the visual tract between the corpora quadrigemina and the eyeballs, mydriasis will be present. In the former condition the light reflex arc is always broken, while in the latter condition it is not interrupted. In unilateral blindness, which is due to disease of the optic nerve or retina, the pupil of the same side will be dilated, provided the other eye, the normal one, is covered. Light striking the blind eye does not cause the pupil to contract, nor does it cause a response in the pupil of the seeing eye.

Cases, however, do occur, altho very rarely, indeed, in which the reaction of the pupil to light is retained, altho the eye is completely blind, and this may occur even when the blindness is evidently due to disease of the optic nerve itself. This can only be explained on the hypothesis that the fibres for the conduction of the light reflex are more resistant than those conveying visual impressions. Duane, who translated Fuch's text book of opthalmology, states that he has seen one such case. I also saw one such case during the past year in a child of less than school age, who had a bilateral optic atrophy, following choked disc as a result of pressure in the brain. The last time I saw him he was totally blind, yet both eyes retained the reaction of the pupils to light.

When an anesthetic is given and during the stage of excitement and rigidity, the pupils are always dilated, due to the stimulation of the sympathetic system. This dilation may be brief and occasionally absent, when morphia has been given before the operation; as the change from rigidity to relaxation comes on the sympathetic system will become paralyzed and the pupil will contract. If the anesthetic is now pushed, due to the paralysis of the central nervous system, the pupil will dilate. Light reflex, depending upon the integrity of the same, and the corneal reflex will also be lost.

A good rule or test to follow to determine whether a dilated pupil is a sympathetic dilatation of light anesthesia or a paralysis of a profound one, Flagg says, is to stop the anesthesia completely and give air. If after a few moments the pupil contracts (from a lightening of the anesthesia), then the dilatation was that of a profound anesthesia or dilatation of paralysis. The eye in this case is usually dry and lusterless from an inhibited lacrimation. Again, if, on the other hand, the pupil remains unchanged in the face of a light anesthesia, the dilatation was caused by sympathetic stimulation and took place because the anesthetic was light. The eye in this case is usually moist, lacrimation being abundant.

During recovery, owing to the action of various stimuli applied to the sympathetic nervous system, the pupil usually dilates, especially if the patient is about to vomit. Where anesthesia has been given and recovery is entirely tranquil, the pupil may become pin-point. Summing up, the story of the pupil and anesthesia may be told in a few moments. A dilated pupil, with moist eyeball, which does not contract when anesthesia is withdrawn, with an active corneal light reflex, means light anesthesia; while a dilated pupil with lusterless eyeball, with an absence of light reflex, which contracts when the anesthetic is withdrawn, means a deep anesthesia. A contracted pupil with an active light reflex is a safe sign.

Role of Trauma in the Etiology of Organic and Functional Nervous Disease. The assertion that trauma may originate cerebral tumors, according to S. A. Kinnier Wilson, London, England (Journal A. M. A., Dec 29, 1923), is unjustified and obsolete. This is also true of disseminated sclerosis. Various cases of neurosyphilis, including tabes and general paralysis are on record, in which an apparent connection between trauma and the appearance of symptoms of general paralysis, for example, is sufficiently impressive. In the absence of spirochetal infection no one will now admit that trauma, per se, can cause neurosyphilis in any of its manifestations. Can it actually initiate a morbid process on the part of the spirochete, in the sense that the latter otherwise would have remained forever latent and innocuous? Put thus, the question can scarcely be answered in the affirmative; yet who shall say that a direct negative represents the only possibility? Since there must be some limit to the interval of time elapsing, after an alleged injury, ere symptoms appear, Wilson suggests that in the case of organic nervous disease it should be restricted at the widest to one week. The author's general standpoint is that he is unable to understand how a single trauma can cause a progressive neural degeneration of abiotrophy; still less a progressive neural toxidegeneration. He is convinced that the solution should be sought in the biochemical field of intrinsic neural "life and death," and not glibly assign progressive degenerative processes to the action of a "shock"; even assuming a concussion so bad as to produce, on a small scale, fragmentation of myelin, we know, as a histologic fact, that scavengering takes place very promptly and that neural regeneration is equally sure. This being so, the view that trauma may on occasion cause neural abiotrophy of a progressive character is opposed to the facts of neuropathology. As for epilepsy, Wilson believes with Turner when he insists that "it is difficult to avoid the conclusion that something more than local tissue alterations are reqnisite for the production of the seizures of traumatic epilepsy, and the determining agent, in my opinion, is an inherited or inborn constitutional pre disposition to nervous instability and epilepsy." The war has shown a thousand times how the genuine effects of concussion, cranial or spinal, pass off eventually, with a complete return to the normal; but if they persist, in the absence of evidence of objective change, it may be taken as an infallible rule that the condition has ceased to be one of concussion. Conscious and unconscious motives also must be taken into account.

ANNOUNCEMENT

The Eighth Annual Clinical Session of the American Congress on Internal Medicine will be held in the Amphitheatres, Wards and Laboratories of the various institutions concerned with medical teaching, at St. Louis, Mo., beginning Monday, February 18, 1924. Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Address enquiries to the Secretary-General, Elsworth S. Smith, President, St. Louis, Mo.

A CORRECTION

Seattle, Wash.

To the Editor:

I wish to correct the recent publicity given my name in a local paper. I am not nor have I any intention of being connected with any gland clinic. To prevent the recurrence of the use of my name legal measures will be taken if necessary. Trusting this will clarify this murky and more than embarassing situation, I am

Very truly yours,
Irvin A. Weichbrodt, M.D.

NORTHWEST MEDICINE
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EDITORIAL

JOSEPH LISTER

(April 5, 1827—February 10, 1912)

Genius is a rare gift. Few have it but all may profit by study of the lives of those who have been so happily endowed. Of such, none shine more resplendently or have done more direct and understandable good for mankind than Lord Lister. His life was contemporaneous with, and complementary to, that of Pasteur, and he applied in a practical surgical way the marvelous discoveries which Pasteur made of germ life. Pasteur may well be known as "the father of bacteriology," and Lister as "the father of modern surgery." To him is due most of the credit for the development of antisepsis and its child, asepsis, to which we owe our present surgical successes and possibilities. Nowhere can one get a more vivid picture of surgical conditions during the middle of the last century than in Wrench's biography of Lord Lister.*

Striking examples from that book may be quoted here. During the Franco-Prussian war, in France, out of "13,173 amputations of all sorts including lesser ones, such as those of fingers and toes, 10,006 ended in death." In the hospitals of Europe the mortality from amputations, especially of the lower limbs, even in time of peace, was not far from two out of five cases. To young men of the present age the conditions in the preantiseptic era will seem incredible. No operation was performed with even a reasonable prospect of clean healing of the wound. Roswell Park, in his "Epitome of the History of Medicine," states that as late as 1876 all the surgical operations with one or two exceptions in a hospital in Chicago, in which he was then an interne, resulted in death from some form of sepsis. Operations outside of hospitals were much more successful than those within, and these institutions, designed for the relief of suffering humanity, became charnel houses in which death was commonly the victor and in which untold and all but unbelievable scenes of suffering were routine. It was believed that fresh air was detrimental to surgical wounds and that oxygen, if allowed to reach a wound, was the cause of the inevitable suppuration found in practically all wounds. The unventilated hospital wards smelled to Heaven. The abdomen, the chest, the joints and the cranial cavity were regarded as beyond surgical entrance and surgery was limited to the repair of injuries, the opening of abscesses and to a few operations of choice. Gangrene, septicemia and pyemia were the principal factors in the tragedies of hospitalization. Lister changed all this and brought about the present conditions, changing hospitals from houses of agony and death to places wherein suffering is relieved and the remarkable surgical successes of the present day are made possible.

Lister, unlike Pasteur, whose theories on germs he espoused, was the son of a man of no mean scientific attainments, a Quaker possessed of some means, of scientific zeal, and of great interest, especially in optics, to whom is due much if not all of the credit for the achromatic lens as it is used in the modern microscope. Early in his career Lister investigated the processes of inflammation and made some discoveries that were of immense value to him later on. During the early sixties he began the use of carbolic acid, applying the very crude preparation of that day to wounds, especially those made by compound fractures, and from this he developed the antiseptic technic which did so much for surgery and which was a long step toward the present era of asepsis. Strangely enough, as Pasteur was fought and discredited at every turn by many of the scientists of France, so Lister was opposed by the surgeons of England and only after over fifteen years of demonstration were his teachings accepted. London, according to his biographer, was the main obstacle to the adoption of his teachings. Here the relatively few surgeons of that day, conceited, vainglorious and self-satisfied, did not even take the trouble to visit Lister's clinics at Glasgow and later at Edinburgh, to see at first hand his great work. France was equally lethargic in adopting his methods, and her medical men seem to have been much more interested in discrediting Pasteur than in taking up the new discoveries of either of these two scientists. Denmark, thru Dr. Saxtorph, and Germany, with the efficiency which characterized her at that time, adopted and utilized Lister's teachings to great advantage. At last, in 1879, Lister's triumph came. He had been called to London two years previously and given control of a relatively small hospital. After a period of neglect he was able to make a few surgical demonstrations that over night convinced his opponents. He lived two decades to witness the glorious spectacle of surgical scientfiic advance, due almost entirely to his genius and far excelling all of the previous successes in this line in the world's history.

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* Lord Lister, His Life and Work, by G. T. Wrench, M.D. Published by T. Fisher Unwin, London, 1913.

To what may Lister's successes be ascribed? That he possessed genius is evident, and in his case genius included the great gifts of logic, philosophy and deductive analytic power, coupled with almost unexampled perseverance, patience and tenacity of purpose. Nature had given freely to him in many ways. He was almost equally conversant with English, German and French and was able to speak extemporaneously in any of these languages. He possessed a pleasing personality and, according to his biographer, his countenance was beautiful, serene and self-confident, yet extraordinarily modest. His physique too was splendid and his general appearance radiated sound health, dignity, scholarship, refinement and sympathy. The account of his battles upward toward the shining kingdom of success makes novels tame and dull by comparison. And by the grace of God he died, not like many heroes, "unhonored and unsung," but with the harvest of his good deeds garnered and stored, and the world's plaudits ringing in his ears.

PACIFIC NORTHWEST MEDICAL ASSOCIATION MEETING

The third annual meeting of the Pacific Northwest Medical Association will be held this year at Vancouver, B. C., June 26-28. Since this meeting is under the supervision of the Canadian brethren, the program will consist largely of papers by distinguished physicians and surgeons of England and Canada. This arrangement will meet with the hearty approval of every member of the profession on this side of the line. It will be a delight to meet these men and listen to addresses from well-known residents of the British Empire. The complete program with titles of papers and addresses will be published in this journal as soon as they are available. All can be assured that they will maintain the high standard already established at the previous scientific meetings of this organization.

The following have already accepted invitations to attend this meeting: Sir John Thomson Walker, London, England; Dr. W. W. Chipman, Professor of Gynecology, McGill University; Dr. John Tate, Professor of Physiology, McGill University; Dr. F. N. C. Star, Toronto University; Dr. L. J. Austin, Professor of Surgery, Queen's University; Dr. George S. Young, Associate in Medicine, University of Toronto; Dr. L G Rowntree, Mayo Clinic. Dr. Frederick C. Cotton, Surgeon-in-chief, Boston City Hospital, will give an address on "Reconstruction Surgery."

The medical profession of Vancouver is lending its united support to this meeting, and it is their aim to make it a success in every way possible. A cordial invitation is extended to all physicians in the Northwest states to attend this meeting. It is confidently believed that it will pay everyone for the time and money expended to be at this 1924 session in Vancouver.

EXAMPLE OF SOCIALIZED MEDICINE

A few years ago there was much published in the magazines and medical journals regarding the socialization of medicine in the United States. There were many enthusiasts who hoped and predicted that this system in its various manifestations would sometime prevail in this country. Already industrial insurance commissions exist in many of the states, whose function is to care for workmen who have sustained injuries in the industries. In some states there has been a strong agitation to extend this to all kinds of sickness. Old age pensions have enlisted a great deal of discussion and support. The Government, in cooperation with many of the states, is already participating in socialized medicine thru the adoption and functioning of the Shepherd-Towner Act. Whether the socialization of medicine will ultimately be extended to such an extent as is displayed in some European countries, is a matter of speculation and of grave doubt on the part of a large proportion of the medical profession and the citizens generally.

It is not proposed to discuss the merits or objections of this development of medicine in the United States. We wish to call attention, however, to the paper in this issue by Dr. Torland who has recently returned from a long visit to Norway, his native land. Here is an illustration of the complete adoption of socialized medicine by a whole nation. To be sure it is on a small scale, compared with the population existing in the United States, but to a less degree it probably illustrates the features which would be displayed here or elsewhere, if this system were to be placed in operation. One can herein discover much food for reflection, if seriously inclined to advocate the socialization of medicine in this country.

ABRAMS FOLLOWERS AS SOCIETY MEMBERS

The disciples of Abrams and the practitioners of his fantastic, illogical and unsupported theories are recruited chiefly from those found in the borderline of medicine, who have acquired a limited amount of real medical knowledge or a smattering of medical theories. Hence, those who boast themselves as exponents of electronic reactions are chiefly numbered among osteopaths, chiropractors, various drugless healers or even those with little if any medical pretentions. Yet in many of our cities are to be found men graduated from representative schools, who have received scientific medical training, whose mental bias has been so warped by the lust for gold that they are willing to abandon such scientfiic principles as they have obtained, and pretend belief in a system of mechanical diagnosis and machine-made treatment, founded on the unproven statements of its originator. Some of these physicians have taken indignant exception to being classed as charlatans, and have had the presumption to claim that they are still practising medicine. Yet how can a physician be classed otherwise who premeditatively assures his patient with an incurable ailment that he is able to effect a cure, accepts a large sum of money in advance payment, subjects the patient to a prolonged period of machine-applied treatment, and then declares him cured of the incurable disease because, forsooth, the mechanical appliance is claimed to indicate the removal of the etiologic poison, while the disease continues its uninterrupted course, the deluded patient being assured this results from some other source in his system. This is no imaginary description but has been duplicated many times among the victims of the Abrams cult.

One would suppose that one of these physicians would scarcely presume to maintain his membership in a society of medical men and women who aim to follow ethical practice. Yet it seems some continue this relationship and it has been necessary to inform them that their presence is undesirable. This fact has been recently demonstrated on the part of the Oregon State Medical Society which found it incumbent to pass the following resolution in order to protect itself from malpractice suits which might well be the legitimate sequence of such procedure as outlined above.

At a meeting of the Board of Counselors of the Oregon State Medical Society, Oct. 31, 1923, among other matters the Secretary was asked to communicate with the Secretary of the Portland City and County Medical Society and request that some definite action be taken against those members who are practicing the Abrams system, inasmuch as the State Society is under obligation at the present time to defend them in case of a malpractice suit being brought. The following resolution was then presented and passed:

> **Whereas**, it has come to the attention of the Council of the Oregon State Medical Society that certain of the members of the society are practicing the Abrams method of so-called diagnosis and therapy, therefore be it
>
> **Resolved**, that such actions are considered unethical; and be it further
>
> **Resolved**, that the proper officers of the different component societies at once prefer charges against such members with a view of terminating their connection with the local and state organizations.

JOURNAL EXPANSION

The past year has in some respects been the most successful and satisfactory in the existence of this journal. It has been possible to enlarge its scope by the permanent addition of sixteen pages of reading matter as well as improve its appearance by the adoption of a more attractive cover. The expansions have been rendered possible by increased income from advertising. More along the same line is in anticipation for the future, to be put into effect in accordance with the financial condition of the journal. It is expected that these plans will be assisted during the coming year by reason of an increase of the price of subscription to society members. When Northwest Medicine was adopted as the official publication of the state medical associations of Oregon, Washington and Idaho, in 1909, the price of subscription was placed at $2.00, with the provision that to the members of the associations which it represented the price should be $1.00. Since that time the journal has about doubled in size, cost of publication has greatly increased, and most magazines and journals have materially raised their prices of subscription. It is, therefore, obvious that this proposed increase is reasonable and moderate. While the Oregon society has already approved of this increase, it is expected that the other associations which the journal represents will follow a similar course in the course of a few months.

NEW ADVERTISEMENTS

Attention is called to the following new advertisements appearing in this issue: Eli Lilly and Co. (insert) present a two-page description of Iletin, the authorized preparation of insulin. The Hoffman-La Roche Chemical Works (page 13) offer Iodostarine Chocolate Tablets for prophylaxis and treatment of goiter. Post Graduate Hospital and Medical School of Chicago (page 12) announces its special courses of instruction. Scenic Hot Springs (page 28) lists its attractions as a health resort. New York Intravenous Laboratory (page 8) describes Loeser's Intravenous Solutions.

MEDICAL NOTES

OREGON

Anniversary Celebration. The Oregon State Board of Health celebrated its twentieth anniversary at Portland, on the evening of Dec. 14. Dr. A. C. Smith, father of the bill that created the State Board, had the distinction of cutting the birthday cake which burned twenty candles. Dr. J. W. Rosenberg, President of the Board, presided, with Dr. C. J. Smith as toastmaster. Addresses were made by Governor Pierce, Mayor Baker, and President Campbell of the State University. Drs. W. T. Williamson, Fred Gulick, E. A. Sommer, R. D. Dillehunt and J. I. Pettit spoke on various matters pertaining to public health and the medical profession

Hospital Dedicated. Last month the Shriners' hospital for the care of crippled children was dedicated at Portland. It will care for dependent children below the age of sixteen years. Appropriate dedication services were conducted by represntatives of Shrine temples from the cities of Oregon, Washington and California.

Portland Academy of Medicine held a meeting Dec. 13. Dr. C. F. Eikenbary of Spokane gave an address on fractures of the lower end of the humerus in children. Dr. Wm. House was installed as president in place of Dr. J. L. Selling, resigned. Dr. J. E. Else was chosen as president-elect.

National Medical Fraternity Installed. Alpha Omega Alpha, honorary national medical fraternity, last month was granted a charter to the University of Oregon Medical School at Portland. Requirements for membership include scholarship standing, moral character, and originality. It is considered a distinct honor for a medical student to be elected to this organization.

Sues for Back Taxes. The Portland Open-air Sanitarium has brought suit against the county and tax collector for exemption from taxation and the refunding of taxes paid during the past three years. The request is based on the fact that it is a nonprofit organization, sustained by a revenue received by donations. Residents of Clackamas County are treated free of charge.

Special Study in Europe. Dr. Ralph C. Mattson, of Portland, departed for Europe last month, where he will spend time in England, France, Germany, Austria and Switzerland in special research work in the treatment of tuberculosis. His work will be of special interest to the University of Oregon Medical School, of which he is a faculty member.

Contract for the Insane. Dr. H. W. Coe, of Portland, has been awarded the government contract for the care of the Alaskan insane at Morningside Hospital. He received a five-year contract at $52.00 per month each. He will also spend from $30,000 to $40,000 for new buildings to include dairy barn and vocational training shop.

Doctor Acquitted. Dr. E. A. Wrightman, of Silverton, was last month acquitted of the charge brought against him of violating the liquor law. He was charged with possession of alleged intoxicants in his office. The case excited a great deal of interest and its conclusion was received with satisfaction.

Dr. I. A. Dunlap, who for the past ten years has been medical superintendent of the Walla Walla sanitarium, has moved to Vernonia where he will engage in practice.

Medical Weddings. Dr. Roger Holcomb, of Portland, was married to Miss Edna Mihnos, of that city, on Dec. 19. Dr. J. H. Wells, of Portland, was married to Mrs. B. P. Duncan, of that city, Nov. 28.

WASHINGTON

New Hospital Planned. Plans are under consideration in Washington, D. C., for the construction of a new marine hospital in Seattle. The hospital for the Puget Sound and Alaskan district in Port Townsend contains a total of one hundred beds. The other institution for the coast is at San Francisco. Owing to the great increase of shipping from the Puget Sound district, hospital accomodations for marines is totally inadequate. The San Francisco hospital will be enlarged, and probably a new one will be constructed at Seattle at an early date.

Cushman Hospital to be Continued. Considerable agitation arose last month over the rumor that Cushman hospital at Tacoma was to be abandoned. This arose from the receipt of orders to receive no more patients at the hospital. It was stated that the Government proposed to transfer patients to the neuropsychiatric hospital at American Lake or other hospitals in Eastern Washington. A telegram from Washington authorities stated that the hospital would not be closed while conditions warranted its continuance as a Bureau hospital.

Children Admitted to Hospital Ward. The children's ward of Oakhurst Sanatorium, at Elma, has been opened for the receipt of patients. This ward was a gift to the county from various trade unions and was equipped by clubs from Aberdeen and adjacent communities.

New Hospital Nearly Completed. The United States Veteran's Hospital for mental patients at American Lake, which has been constructed at a cost of $1,300,000, has been turned over by the contractors to the federal government. All but three or four of the buildings have been accepted. It is expected that patients will be received soon after February 1. The staff officers of the hospital include Surgeon Reserve Leon M. Wilbur, medical officer in charge; Surgeon Reserve Henry E. St. Antoine, executive officer; Surgeon Reserve Robert H. Rea, clinical director.

Hospital Crowded. Northern Hospital for the insane at Sedro-Woolley is reported as crowded to capacity. At last report it contained 1057 patients which exceed that of three years ago by 100. This overcrowded condition is also typical of the other similar institutions of the state.

Sanitarium Location in Controversy. The periodical discussion has recently prevailed in Seattle relative to the location of a sanitarium. An osteopathic practitioner has secured land and proposes to erect a $50,000.00 sanitarium just outside the city limits but adjacent to one of the city reservoirs. The City Health Department has protested and has taken action to prevent construction on the grounds of probable contamination of the water supply. The sanitarium proponents are equally emphatic that such contamination will not ensue. Final decision in the matter is still awaited.

Hospital Association Organized. The Longview Hospital Association was organized December 12. Officers for the following year were elected among the doctors of the city. It was decided at once to prepare for a seventy-five bed unit of a permanent hospital.

Hospital Incorporated. Articles of incorporation were last month filed with the secretary of state by the Centralia General Hospital Association which capitalized for $12,000. The incorporators are six well known physicians of that city.

Health Officer Resigns and is Reappointed. Dr. H. H. Smith, of Yakima, resigned last month from the position of city health officer, owing to the election of a new Board of City Commissioners and to give them a free hand for appointment of his successor. He was promptly reappointed to office to continue during the incumbency of the new board.

Appointed Joint Health Officer. Dr. J. P. Kane, of Tacoma, has been appointed health officer for the city and county of Walla Walla. According to a recent agreement a full time official was agreed upon by the officials of both city and county.

Health Officer Resigns. Dr E. L. Botts, of Wenatchee, recently resigned as health officer of Chelan County. He has served in this capacity for two years. He plans to locate elsewhere for future practice.

Snohomish County Medical Society held its annual banquet at the Bungalow Inn, Silver Lake, Dec. 11. Fifty physicians of the county were in attendance. Dr. E. W. Young, of Seattle, was the speaker of the evening, beside which addresses were given by several other physicians.

Chelan County Medical Society held its annual meeting at Wenatchee early in December. Dr. R. C. Congdon, of that city, was elected president, and R. C. Mitchell was chosen secretary.

Low Death Rate. According to the recent publication of the Census Bureau, the Pacific Northwest continues to hold the record for low death rates. The Washington rate is given as 10.1, compared with Oregon, 11.5, and California, 14.1. All of these however, are distanced by Idaho, with a rate of 8.1, and Montana, 8.6. For cities over 100,000, Akron, Ohio, heads the list with a death rate of 7.5 for 1,000 population, followed by Seattle, with 9.6.

President of Athletic Club. The Seattle Amateur Athletic Club has been recently organized and a campaign instituted to secure 2000 members. Dr. W. C. Speidel of that city was chosen as president. The doctor was a well-known athlete and prominent football player during his undergraduate days at the University of Washington.

Elected Vice-President. Dr. J. C. Cunningham, of Spokane, was elected vice-president of the Great Northern Railway Surgeons' Association at a meeting recently held in St. Paul, Minn.

Reelected President. Dr. Don Palmer, of Seattle, was recently reelected President of the "Big W Club" of the University of Washington at it annual meeting held in Seattle. The organization includes former athletes who have acquired the "W."

Dr. J. Valesques de Leon, formerly of the Philippine Constabulary and a graduate of the Army Medical School, has located for practice at Chimacun.

Surgeon Ordered East. Maj. Z. L. Henry, Chief Surgeon at Ft. George Wright, Spokane, for the past two years, has left for Pittsburgs, Pa., where he will join the organized reserve.

Dr. W. O. Bell, of Seatle, who has spent the past year in study at Vienna, has returned home to resume practice.

MONTANA

Yellowstone Valley Medical Association held a meeting at Billings, Dec. 1. Papers were presented following a dinner. The following officers were elected for the following year: President, D. J. Perry; Vice-President, Dr. J. D. Barrett; Secretary, W. F. Weedman; Treasurer, J. H. Graham; Censor, E. A. Stripp.

Smallpox Epidemic. Smallpox prevails in certain sections of the state to an unusual extent. An order from the State Board of Health for compulsory vaccination has stirred up very lively discussions and opposition which centered at Butte and Anaconda. In the meantime the Montana Freedom League became very busy protesting against compulsory vaccination and quarantine measures. The county boards of health offered free vaccination. The school boards to exclude the unvaccinated from attending school.

Measles Epidemic. From Billings was reported an extensive epidemic of measles last month. Although this disease is not considered as serious as other contagious diseases of childhood, attention was called to the fact that as many children die from it as from scarlet fever, according to some authorities. In some of the smaller towns schools were closed temporarily on account of the spread of the disease.

OBITUARIES

Dr. R. N. Jackson, of Dover, Ida., one of the oldest and most respected physicians of the state, was drowned in the Pend Oreille river on December 6, How the accident occurred is not exactly known. The doctor and nurse, responding to an emergency call, were crossing the river on the ferry. When some hundred feet from short he started his engine and drove off the boat into sixty feet of water. He was born in New York, in 1885. He graduated from Long Island Hospital Medical College in 1880. He practiced in Leander, N. Y., for two years then moved to Fairbault, Minn., where he remained for over twenty years. He located in Sandpoint in 1908. He representing Bonner County in the state senate, 1916-17. In 1918 he was appointed superintendent of the Mental Hospital at Blackfoot which position he held for several years, opening an office in Blackfoot after his retirement. In 1922 he became surgeon to the A. C. White Lumber Company at Dover, which position he held when drowned. Life brought to Dr. Jackson many reverses and disappointments, but thru it all he was the same cheerful cheery man, whom nothing could cause to lose his bright outlook on life.

Dr. W. H. Davis, of Albany, Ore., died in Portland Dec. 14 from chronic nephritis, following an illness of two years. He was born at Silverton, Ore., 1860. After a preliminary education at home schools, he attended Willamette University and the University of Oregon. He graduated from the University of Oregon Medical School in 1883 and located for practice at Harrisburg. In 1889 he located at Albany. He descended from a family of physicians. His father who crossed the plains in 1852, had been practicing for many years in Marion County. He was identified with many civic enterprises at Albany, having served on the school board and having been elected three times mayor of his city.

Dr. Daniel Buckley, of Seattle, Wn., died Dec. 18, after a four days illness, of pneumonia. He was born in Farmington, Minn., in 1875. He graduated from the University of Minnesota in 1895 and received his medical degree from the same institution in 1898. He practiced in Seattle for the past twenty-two years. He served as health officer and for two years was deputy coroner of King County. He was well known for his genial disposition both among his professional and personal friends.

Dr. Albert Mattice, of Seattle, Wash., died Nov. 29, from self-inflicted gunshot wound. He was 40 years of age. He spent his youth at Sedro-Woolley. He was a graduate of John Hopkins Medical School and took postgraduate work in several European cities. He located in Seattle in 1911, where he practiced, except during the period he served with the army in France.

Dr. John H. Hudgins, of Spokan, Wash., died in that physician of Walla Walla valley. In the early days he practiced at Waitsburg. In 1896 he joined the Klondike rush to Alaska, where he practice dfor several years. For more than twenty years he practiced in Spokane.

Dr. J. Tuttle, of Astoria, Ore., died Dec. 14, after an acute pulmonary illness of short time, altho he had been in poor health for several years. He was 81 years of age. For more than forty years he was a prominent physician of Clatsop county. For many years he was federal quarantine officer at Astoria.

Dr. Milton Van Dyke, of Seattle, Wn., died Dec. 18, at the age of seventy-two years. He was born in Pennsylvania and moved to Minnesota in his boyhood, where he lived and practiced medicine until locating in Seattle thirty-five years ago.

Dr. F. L. Ashton, of Seattle, Wn., died at Sedro-Woolley, December 17, after a year's illness. He was born in Virginia in 1880. He received his medical degree from the University College of Medicine, of Richmond, Va. He settled in Seattle in 1905, where he practiced until his death.

REPORTS OF SOCIETY MEETINGS

MONTANA STATE MEDICAL ASSOCIATION

MINUTES OF THE FORTY-FIFTH ANNUAL MEETING OF MONTANA STATE MEDICAL ASSOCIATION, ST. JOHN'S PARISH, BUTTE, MONTANA, JULY 11-12, 1923

The forty-fifth annual meeting of Montana State Medical Association was called to order by President, H. T. Rhoads, at 9:30 A. M., July 11, 1923.

The Association was briefly welcomed by Dr. G. O. Dayton, President of the Silver Bow Medical Society, who introduced Mayor Morgan who formally gave the Association freedom of the city.

In his response, Dr. E. M. Gans mentioned the rapid return to life of the family doctor to activity in the various communities.

The Secretary read the minutes of the previous meeting which were approved.

Dr. H. T. Rhoads called Vice-President L. R. Packard, of Whitehall, to the chair and presented the President's Annual Address.

Dr. E. D. Hitchcock, of Great Falls, told about "Functional Tests of the Kidneys and their Clinical Value." Dr. J. H. P. Gauss, of Lewiston, discussed the topic.

Dr. W. F. Williamson, of Portland, Oregon, a trustee of the A. M. A., spoke on "Medical Organizaton."

Dr. W. F. Cogswell, of Helena, talked about "The Future of Public Health in Montana." Remarks were made by Drs. A. P. O'Leary, C. McGill, and E. D. Hitchcock.

The meeting adjourned for lunch.

At 2:20 P. M. Dr. L. R. Packard, of Whitehall, Vice-President, called the meeting to order.

Dr. B. J. Heetderks, of Manhattan, read his paper on the "Cathartic Treatment of Constipation." This subject was discussed by Drs. Sievers, Gregg, Buchen and Heetderks.

Dr. Robert von der Heydt, of Chicago, presented a paper on "Retinitis, Especially as Related to Brights Disease." Drs. Dunlap, Morse and von der Heydt discussed the question.

Dr. A. W. Morse, of Butte, read a paper, "Only a Cold in the Head." Discussed by Drs. Heetderks and Morse.

Dr. W. F. Williamson, of Portland, read a paper on "The Insane Criminal." Remarks were made by Dr. Morse.

Dr. V. C. Hunt, of Rochester Minn., read a paper on "Cancer of the Uterus." Discussed by Drs. Gauss, Sievers and Hunt.

Dr. T. C. Witherspoon, of Butte, presented the topic, "Ulcers of the Stomach." Discussed by Drs. Sievers and Witherspoon.

The meeting adjourned.

An excellent banquet was given the Association at the Silverbow Club at 7:00 P. M. During the evening Mr. Towne and his associates entertained the visitors and speeches were made by Drs. Victor H. Stickney, of Dickenson, N. D., James P. Aylen, of Fargo, W. F. Williamson of Portland, Ore., and several of the active members.

Thursday, July 12, at 10:30 A. M. Vice-President Packard called the meeting to order, Dr. Peter Potter acting as secretary.

Dr. R. C. Hall, of Anaconda, read a paper on "The Rubin Test" and demonstrated the apparatus. Discussed by Drs. Cogswell, Sievers, Karsted and Hall.

The Association took a five minute recess and was called to order by President Rhoads for the purpose of transacting the business that might come before it.

The Aetna Insurance Co. representative, Mr. Givens, of Great Falls, told the members why he thought it would be a good idea to have a group policy with his Company, protecting the members of the Association against mal-practice, instead of individual policies. Dr. Monahan moved that this question be referred to the committee. Seconded by Dr. O'Leary. Carried.

The report of the committee on arranging for the program and banquet at the annual session was read and there were no objections to it.

After the action of the House of Delegates of 1922 and 1923, pertaining to raising the dues from two to five dollars per annum, was read, Dr. Carman, of Butte, moved that the general assembly vote that the dues be five dollars, seconded by Dr. B. V. McCabe of Helena. There was no discussion and the motion carried unanimously.

Chapter Nine of the By-Laws was amended in Sec. 13 and 14 to read: The Secretary of each component society shall forward its assessment, together with its roster of officers and members, and list of non-affiliated physicians of the county or district, to the Secretary of this Association each year by April first.

Sec. 14: Any county society which fails to pay its assessment, or make the report required, on or before April first, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House of Delegates until such requirements have been met. Members who have not paid their dues by April first shall be suspended.

The work of the committee on Fee Schedules was presented. The committee was instructed not to adopt for the Association the proposed Industrial Accident Board Schedule but to use our own revised schedule for our charges.

Dr. B. V. McCabe invited the Association to meet in Helena next year. Seconded by Dr. W. F. Cogswell for the State Board of Health which is ready for the physicians to inspect a very complete and highly efficient plant. Dr. A. P. O'Leary moved that the Association accept the invitation. Seconded by Dr. Dyer. Carried.

The following officers were elected for the ensuing year: President, Dr. R. C. Monahan, Butte; First Vice-President, Dr. H. D. Kistler, Butte; Second Vice-President, Dr. B. V. McCabe, Helena; Third Vice-President, Dr. L. C. Ford, Lima; Secretary-Treasurer, Dr. E. G. Balsam, Billings; Delegate to A. M. A. Dr. C. T. Pigot, Rounud; Alternate Delegate, Dr. H. F. Rhoads, Choteau; Councillors, Drs. Geo. M'Grath, Hamilton; W. W. Taylor, Whitefish; T. A. Grigg, Butte; E. D. Hitchcock, Great Falls.

Dr. E. M. Gans, of Judith Gap, thanked the visitors who contributed to the success of the program by their participation and invited them to meet with the Association at any time they found it possible. The Silver Bow County Medical Society was given a vote of thanks for the courtesies extended. The meeting adjourned for lunch and to reconvene at Warm Springs and Galen.

About sixty members made the trip to Warm Springs in autos and the meeting was called to order by the President at 3:00 P. M. Dr. Hathaway welcomed the Association to the Hospital and suggested that the institution be inspected by all.

Dr. J. C. Shields, of Butte, read his paper on "Empyema." This was discussed by Drs. I. D. Freund, H. E. Coe, of Seattle, A. P. O'Leary, E. A. Welden, and J. C. Shields.

The staff of the Hospital gave a clinic on "General Paresis and Dementia Precox." Several very interesting cases were shown.

The Association departed for Galen, where the meeting was called to order by the President and Dr. C. E. K. Vidal presented a paper on "Pneumothorax" and showed an intersting case of the same.

After the meeting dinner was served the members by Dr. and Mrs. Vidal and the staff. This concluded the program and the meeting adjourned.

MEETING HOUSE OF DELEGATES
SILVER BOW CLUB
FIRST SESSION
July 11, 1923

Meeting of the House of Delegates was called to order at 1:30 P. M. in Silver Bow Club ,by the President, Dr. H. T. Rhoads. Credentials were presented by the following delegates:

Carbon: J. C. F. Siegfriedt.
Cascade: E. D. Hitchcock.
Fergus: J. T. Brice and E. A. Welden.
Gallatin: Jos. Piedalue.
Musselshell: C. T. Pigot.
Park: W. F. Cogswell.
Silver Bow: J. W. Gunn, R. C. Monahan, A. W. Morse, T. A. Grigg and H. F. Carman.
West Montana Medical Society: Geo. McGrath, W. J. Marshall and P. S. Rennick.

There being no contests the delegates were seated.

(The meeting of the House of Delegates had been called for two o'clock on Tuesday, but only two delegates appeared. Marshall and Welden.)

In addition the following Doctors were present: Harry Smith, Missoula; A. W. Deal, Lewiston; G. M. Jennings, Missoula; T. J. Murray, Butte; Jas. P. Aylen, Fargo; W. T. Williamson, Portland, Ore., (A trustee of the American Medical Association.);E. M. Gans, Judith Gap, a Councillor.

The minutes of the previous meeting at the Great

Falls Session, of 1922, were read and approved. The communications to the Association were read and a recess of ten minutes taken to select committees to handle the business involved. The following committees were appointed to report on the respective questions:

The Medical Protective Ins., Hitchcock, Siegfriedt.
Board of Health-Nominations, Morse Hitchcock, Piedalue.
Auditing, Gans, Carman, Siegfriedt.
Date of Fiscal Year, Cogswell, McGrath, Gunn.
Annual Registration Fee, Grigg, Weldon, Marshall.
Program and Banquet, Rennick, McGrath, Pigot.
Official Journal, Welden, Hitchcock, Piedalue.
Raising Dues from $2 to $5, Gans, Cogswell, Morse.
Hygeia, Brice, Monahan, Pigot.
Sterilization Board Member, Siegfriedt, Cogswell, Rennick.
Volstead Act, Brice, Monahan, Hitchcock.
Place of Meeting, Brice, McGrath.
Medical Fee Schedules, Gans, Monahan, Pigot.

These committees were instructed by the President to be prepared to report Thursday at 9:00 A. M., and the meeting adjourned.

SECOND SESSION

Thursday, July 12

The meeting was called to order at 9:00 o'clock by Dr. Rhoads. The following delegates were present: Drs. Hitchcock, Brice, Welden, Rennick, McGrath, Marshall, Piedalue, Pigot, Cogswell Siegfriedt, Gunn, Monahan, Carman, Morse Grigg, B. V. McCabe, of Helena.

The following doctors were also present: P. L. Green, Livingston; W. Cotton, Forsyth; T. J. Murray, Butte; Donald Campbell, Butte; J. P. Aylen, Fargo; V. H. Stickney, Dickinson, N. D.; H. E. Coe, Seattle, and W. T. Williamson, Portland.

Dr. C. T. Pigot, of Roundup, delegate to the A. M. A., said there was no outstanding features of the Annual Convention to report. The minutes could be read in the Journal.

The Auditing Committee reported that the financial statement of the Secretary-Treasurer balanced, and Dr. Hitchcock moved that the report be adopted. It was seconded by Dr. Monahan. Carried.

The report of the Medical Protective Insurance Commission was read by Dr. Hitchcock, who recommended that the President appoint a standing committee to investigate the insurance question and report later. Seconded by Dr. Cogswell. Carried.

The report of the Board of Health Nominations Committee was made by Dr. Morse. The following names were recommended for the position: Drs. D. J. Donohue, Butte; Geo. M. Jennings, Missoula; G. A. Fuson, Great Falls; R. H. Beach, Glendive; A. Karstad, Butte. The adoption of the report was moved by Dr. Piedalue. Seconded by Dr. McCabe. Carried.

The report of the committee on the date of the fiscal year was read by Dr. Cogswell as follows:

1. That the Medical Association of Montana establish its fiscal year to conform with the calendar year.
2. That members who have not paid their dues by April first be suspended.
3. That Article "Two" be rigidly followed.
4. That the State Secretary's reports conform to the uniform plan adopted by the A. M. A.

It was also suggested by the committee that this report be submitted to the General Assembly today for its consideration, in order that the necessary changes in our by-laws be made. Dr. Cogswell moved the adoption of this report. Seconded by Dr. Carman. Carried.

The committee which considered the Annual Registration Fee for physicians in Montana reported not in favor of an annual registration fee at this time, which would add another tax to the physicians of the state, and advised that the recommendations of Dr. Wm. C. Woodward, Executive Secretary of the Bureau of Legal Medical and Legislation of the A. M. A., be followed. "Abide by the law as it is on the books." Dr. Grigg moved acceptance of the report. Seconded by Dr. Marshall. Carried.

The committee on the question of arranging the program and banquet of the Annual Session was of the opinion that each member in attendance pay a charge per plate for the banquet instead of the expense being born by the local society, where the meeting is held; and that, when absolutely necessary, the President and Secretary are authorized to pay actual traveling expenses for authors of exceptionally meritorious papers for the annual program. In the past the expenses of the annual sessions have been paid by special assessment of from $10.00 to $25.00 apiece, levied upon the doctors belonging to the medical societies in the larger cities. The new way will distribute the cost more equitably and make it possible as well for places with a small number of physicians to invite the annual session. The adoption of this report was moved by Dr. Rennick. Seconded by Dr. Welden. Carried.

The committee on the question of raising the annual dues from $2.00 to $5.00 asked that this matter be referred to the General Assembly for its consideration. It recommended that the dues be $5.00. Dr. Brice moved the adoption of the report. Seconded by Dr. Cogswell. Carried unanimously.

(At the Great Falls Session, in 1922, the motion was made to raise the dues from $2.00 to $5.00. The secretary was instructed to follow the by-laws in making this change. Consequently in April 1923, all county societies were given notice that at the Annual Meeting in Butte, the necessary vote would be taken on this raise in dues. No objections have been brought to this committee, no delegate has registered an objection from his society. Consequently, since they have adopted the report of the committee by unanimous vote of the members of the House of Delegates at this Annual Meeting, the change in dues from $2.00 to $5.00 has been made according to the by-laws.)

The commitee which had for its consideration the selection of an Official Journal for the State Association brought in the following report through its chairman, Dr. Welden: Northwest Medicine, published in Seattle, the official journal for the Associations of Oregon, Washington and Idaho, is recommended. Dr. H. E. Coe, of Seattle, an associate editor was present and told of the merits of such a scheme; and the letters from the Editor, Clarence A. Smith, told us that for $1.00 per year per member the Journal would be furnished to the Montana members. The proceedings and papers of the annual sessions would be published; also as space permitted, papers read before county society meetings. Dr. Welden moved the adoption of the report and that $1.00 of the $5.00 per capita dues be regarded as forming the Journal Fund of the Association and it be due the Journal Publishing Company, April 10, of each year. Seconded by Dr. Grigg. Carried.

The committee which had for consideration the selection of "A Female Member for the Sterilization Board," recommended that Dr. Caroline McGill be appointed. Dr. Siegfriedt moved the adoption of the report. Seconded by Dr. McCabe. Carried.

Dr. Brice read the report of the committee which considered how best to help the circulation of the new Journal Hygeia. It is recommended that the medical profession try to get more subscribers, if possible, and that the local societies appoint committees for this purpose. The adoption of this report was moved by Dr. Brice. Seconded by Dr. Rennick. Carried.

The committee on the Volstead Act reported as favorable to the acceptance of the sentiments embodied in the report of the House of Delegates of the A. M. A. on this question. Adoption of this report was moved by Dr. Monahan. Seconded by Dr. McCabe. Carried.

The Necrology Committee reported appropriately on those who have died during the year. Among the older members are Drs. P. H. McCarthy, of Butte; W. B. Parsons, of Missoula.

The committee, which had for its consideration the Fee Schedule of the Medical Association of Montana, and the Industrial Accident Board Proposed Fee Schedule, asked for more time to complete its work. Dr. Siegfriedt moved that the President appoint a standing committee for this work to act for the Association and to make changes it deems necessary in the fees set forth and that it have meetings at the call of the President and Secretary. Seconded by Dr. Morse.

In the discussion which followed Dr. Pigot suggested there were three items of importance to be remembered in our dealings with the Industrial Accident Board:

1. That as long as the $100.00 was to be prorated for hospital, nursing and other expenses as well as medical services, the doctors would only have a proportionate amount.

2. That the time limit of two weeks was unjust to the injured man, as well as to the medical man who was taking care of him.

3. That the injured man should have the right, when not under contract, to select his own physician.

He advised that we work together with the others interested to remove the financial and time limits.

4. Dr. Morse expressed the desirability of having the fee for medical services separate from the other expenses in accident cases.

Several expressed dissatisfaction at being paid on amount of $100.00 prorated for hospital, nursing, other expenses and medical services instead of receiving the full amount of the bill.

5. Many also felt that physicians should fix their own charges for services, because others fix the charges physicians must pay them. The motion was carried.

The committee which was to consider the place for the next meeting asked that they be discharged and this question be referred to the General Assembly. Motion was made by Dr. Brice. Seconded by Dr. McGrath. Carried.

It was moved by Dr. Hitchcock that the election of officers be taken from the House of Delegates to the General Assembly. Seconded by Dr. Grigg. Carried.

The Legislative committee reported that it was fairly active during the latter part of the 1923 Session of the State Legislature, and gave advice and assistance in handling the following bills:

The bill to abolish the epidemiologist (killed).

The appropriation under the Sheppard-Towner Bill (Passed).

The orthopedic appropriation (Passed).

Andrus' annual registration fee bill (Killed).

The sterilization bill (Passed).

There being no further business, the meeting was adjourned.

WASHINGTON STATE MEDICAL ASSOCIATION

MINUTES OF THE THIRTY-FOURTH ANNUAL MEETING OF WASHINGTON STATE MEDICAL ASSOCIATION, HELD AT DAVENPORT HOTEL, SPOKANE, WASH., SEPT. 20-22, 1923.

(Concluded)

Social Hygiene. Dr. Engles made an informal report, saying that social hygiene is a matter of education, and that the committee had given lectures, sent around motion pictures and had card exhibits. The committee is somewhat hampered by lack of funds. The report of this committee was accepted.

Public School Education. Dr. Sharples, chairman, made an informal report and spoke of the prophylactic treatment of goiter in school children, and of its decided decrease since the treatment.

In connection with this the following letter from the Yakima County Medical Society was read.

July 7, 1923.

Washington State Medical Ass'n,
Dr. C. H. Thomson, Sec'y, Seattle, Washington.

Dear Doctor:

Through the cooperation of the city health office, Medical Association and Department of Supervision of Health of the public schools, the goiter prophylaxis has been made available to the school children of Yakima and vicinity.

With the furtherance of this plan in mind, the Yakima County Medical Society has passed the following resolution:

"We, the members of the Yakima County Medical Society, agree to further the prophylaxis or prevention of goiter in our immediate vicinity, and we further recommend the adoption and furtherance of this prophylaxis by the Medical Association of the State of Washington."

(Signed) H. Storgaard, Secy.

P. S. A copy of the above letter is being sent each County Medical Society in the State of Washington.

Dr. Young said that the Public Health League was very active in this matter and that it would be discussed in detail at the Public Health League meeting. The report of the committee was accepted.

Public Health Committee. Dr. Epplen, chairman, made on informal report on the work of the committee, stating that so far the efforts had been confined almost entirely to his own. They have made arrangements to have lectures at the Washington State College, once a year, and also at the normal school in Cheney. Arrangements have been made with Dr. Nelson to have lectures given at some of the meetings of the Agricultural Department. The report of the committee was accepted.

Cancer Committee. No report.

Mental Hygiene. Report by Dr. Nicholson, chairman.

The Committee on Mental Hygiene has had no meeting, at which all its members were present. I have had conferences on several different occasions with different members of the committee, regarding matters which have come up in the state and which were of vital interest to our committee. This is especially true in reference to certain bills which came up in the legisature regarding the care of the insane. One such bill, which had to do with the commitment of the insane, was defeated because it was a bill which would have been very unjust to the patients and their relatives. The only change made in the laws dealing with the insane and their commitment was one which requires the reatives, when able so to do, to pay a fee of ten dollars for the examination of the insane, and a fee of four dollars and a half per week for the maintenance of the patient in the state hospital. Where the relatives are unable to meet this financial obligation, the county from which the patient was committed is compelled to pay the same for the state, provided the case is a chronic one. But if it is an acutely disturbed and dangerous case, the state is expected to carry the burden of this charge. This law, which was rushed thru in the last few days of the session, is badly worded and leaves the county rather in doubts as to which cases they are to pay for and which cases they are not. King county for the present is even holding up the examiner's fees in certain cases, claiming that the state should pay for certain examinations. I understand that there was no appropriation made by the legislature to meet these fees, and consequently there are no funds to care for the examinations at present.

The whole question of the handling of the insane in our state is still in a very unsatisfactory condition, but we hope that at a future date this subject may be properly handled. There were no changes made in the laws which deal with the care of the feeble-minded. We find that many of the problems in which our committee was interested have been considered by other committees, such as the child welfare, the tuberculosis, the venereal prophylaxis, and the conservation of vision. In fact, our work dovetails very closely with that of many of the committees and we might even say that all the people find themselves more or less interested in mental hygiene studies. In other states at the present time this branch of medicine is receiving a good deal of attention, and the state is paying large sums of money for special work in this line, as it would require a great deal more money and time to properly handle the subject than the society should endeavor to raise. It does recommend that the committee be kept intact and in touch with the work which is being carried on thruout the state by the different organizations, and that an effort be made to assist those organizations which are attempting to work in a constructive manner, and also that steps be taken to kill such bills as are detrimental to satisfactory work along the line of mental hygiene.

The report was accepted.

Committee on Revision of By-Laws. Report read by Dr. Nicholson, chairman.

The committee on the revision of the Constitution and By-Laws of the Washington State Medical and County Societies desires to report that the different county societies have notified them that they have taken steps to revise their constitutions and by-laws so that there will be no conflict between their constitutions and that of the state society.

The report of the committee was accepted.

In closing a motion was adopted that the Contact Committee be continued for one year.

The meeting then adjourned.

MEETING OF THE BOARD OF TRUSTEES

A quorum being present the meeting was called to order at 4:30.

Motion was adopted that we recommend to the House of Delegates that it continue the Contact Committee for one year; that they meet three times a year, in place of four times, in conjunction with the Board of Trustees. It is understood that one meeting shall be at the time of the annual meeting.

Third Session

The House of Delegates was called to order Sept. 22, 9 a. m., by the President. A quorum being present the House of Delegates proceeded to elect officers for the ensuing year. (Those whose terms did not expire are added to complete the list)

ELECTION OF OFFICERS

The following were duly elected:

President, Dr. Wm. F. West, Everett, term expires 1924.
First Vice-President, Dr. J. Reid Morrison, Bellingham, term expires 1924.
Second Vice-President, Dr. F. H. Bush, Yakima, term expires 1924.
Secretary-Treasurer, Dr. C. H. Thompson, Seattle, term expires 1925.
Asst. Secretary-Treasurer, Dr. J. H. O'Shea, Spokane, term expires 1924.

Trustees

First District—
Dr. D. A. Nicholson, Seattle, term expires 1925.
Dr. A. O. Loe, Seatle, term expires 1925.
Dr. R. J. O'Shea, Seattle, term expires 1924.
Dr. C. R. McCreery, Tacoma, term expires 1924.

Second District—
Dr. J. P. Munly, Spokane, term expires 1925.
Dr. Elmer Hill, Walla Walla, term expires 1925.
Dr. S. S. Oppenheimer, Spokane, term expires 1924.
Dr. C. H. Wiseman, Spokane, term expires 1924.

Journal Trustees

Dr. H. P. Marshall, Spokane, term expires 1924.
Dr. P. V. VonPhul, Seattle, term expires 1924.
Dr. H. D. Dudley, Seattle, term expires 1924.

Delegates to A. M. A.

Dr. F. Epplen, Spokane, term expires 1925.
Dr. Frank Maxson (alt), Seattle, term expires 1925.
Dr. D. E. McGillivray, Pt. Angeles, term expires 1924.
Dr. P. D. McCornack, Spokane, term expires 1924.

Everett was selected as the next place of meeting.

In referring back to the meeting of the House of Delegates and the Contact Committee, the President declared that the motion adopted to continue the Contact Committee for one year was out of order, for the reason that it was not a meeting of the House of Delegates alone. The motion adopted by the Board of Trustees to recommend to the House of Delegates that it continue the Contact Committee for one year; that they meet three times a year, in place of four times, in conjunction with the Board of Trustees, was then read and adopted.

The reports of the Committees appointed by the President, were then called for.

The Committee appointed to examine the communication from the American Medical Association regarding the control of clinical laboratories, presented the following report, read by Dr. O'Shea.

We, your committee, to whom was referred a communication from the American Medical Association, regarding legislation for the control of clinical laboratories report as follows:

In view of the fact that it will take some time for the study of the question and it being a matter of legislation, it would seem wise to refer this for investigation to the Public Health League which is the legislative body of this Association. Their recommendation to be referred back to the President with power to act.

(Signed) J. R. Morrison, Chairman
R. T. Congdon
C. L. Hoeffler

Dr. O'Shea stated that the report was not correct in its saying that the Public Health League was the legislative body of the Association. It was moved that the recommendation be carried out. Seconded and carried.

Dr. Thompson read the report of the special committee appointed to review the communication from the Seattle National Bank.

"We the undersigned Committee of the House of Delegates approve acceptance of this report."

(Signed) H. G. Willard, Chairman
E. Hill
R. W. Smith

It was moved that the report be accepted. Seconded and carried.

The special committee appointed to consider the question of increasing the Journal dues, presented the following report:

The committee appointed to consider the question of increasing the Journal dues from one to two dollars a year, wishes to report that, after discussing this subject with many of the members of the society, we are of the opinion that this question should not be settled until it has been taken up with the general membership of the county societies. We would recommend that the trustees consider this subject later in the year after hearing from the county societies.

(Signed) D. A. Nicholson, Chairman
H. E. Willard for C. R. McCreery
C. M. Doland

It was moved that the report be adopted. Seconded and carried.

The special committee appointed to audit the secretary-treasurer's books, made the following report:

The auditing committee appointed to go over the accounts of the Association, for 1922 to June, 1923, approve the report of the certified accountant.

(Signed) A. E. Burns, Chairman
S. S. Oppenheimer
P. A. Remington

It was moved that the report of the auditing committee be accepted. Seconded and carried.

It was moved that the report of the Industrial Relations Committee, and the fee schedule be approved, and recommended to the Department of Labor and Industries. Seconded and carried.

Deceased Members. The committee appointed for resolutions concerning deceased members presented the following report:

Whereas: The Great Physicians of the Universe has called from their earthly labors our well-beloved colleagues:

Dr. Warren M. Brown, of Tacoma;
Dr. Rufus J. Cassel, of Mount Vernon;
Dr. Charles E. Cope, of Tacoma;
Dr. William S. Durrant, of Everett;
Dr. Elmer E. Heg, of Kent;
Dr. William E. Lewis, of Bothell;
Dr. George W. Libby, of Spokane;
Dr. Edward Maguire, of Pullman;
Dr. William T. Miles, of Sedro Woolley;
Dr. Saxe W. Mowers, of Tacoma;
Dr. William McHarrie, of Seattle;
Dr. H. H. Rust, of Gig Harbor;
Dr. Fred S. Sandborg, of Seattle;
Dr. Fred J. Schug, of Tacoma;
Dr. Lee A. Scase, of Centralia;
Dr. Thomas Sloan, of Bellevue; and

Whereas: These colleagues have during their years of practice in their communities at all times and under most trying circumstances exemplified the high ideals of the medical profession; and

Whereas: We feel that in their death the medical profession has lost an honorable member, always ready to respond to the call of distress, Therefore, be it unanimously

Resolved: That the Washington State Medical Association, in its thirty-fourth annual session assembled, hereby expresses its sorrow in the passing of these well-beloved colleagues; and be it further

Resolved: That we hereby formally express to their family, friends and patients this expression of our grief; and be it further

Resolved: That copies of these resolutions be spread upon the minutes of this Association and a further copy, under the seal of the Association, and properly signed by its officers, be forwarded the families of our deceased colleagues.

(Signed) W. D. Read, Chairman
E. W. Young
J. B. Munly

It was moved that the report of the committee be adopted. Seconded and carried.

The Seventeenth House of Delegates adjourned sine die.

SCIENTIFIC PROGRAM

Friday, Sept. 21, Davenport Hotel, 10:00 A. M.

General Session

Responsibility of the Carrier for Acute Infections. Dr. S. H. Johnson, Bellingham.
Discussion: Dr. Paul Turner, Seattle; Dr. A. U. Simpson, Seattle.

Experience with Insulin. Dr. Lester J. Palmer, Seattle.
Discussion: Dr. C. H. Hoffrichter, Seattle; Dr. Frederick Epplen, Spokane.

The Pupil in Health and Disease. Dr. C. L. Hoeffler, Everett.
Discussion: Dr. O. M. Rott, Spokane; Dr. G. E. Price, Spokane.

1:30 P. M.

Morbidity in Maternity. Dr. H. H. Skinner, Yakima.
Discussion: Dr. J. E. Preucel, St. John; Dr. R. N. Hamblen, Spokane; Dr. H. E. Coe, Seattle.

Rest in the Home Treatment of Pulmonary Tuberculosis. Dr. W. B. Penny, Tacoma.
Discussion: Dr. Frank Miller, Spokane.

Dr. Chas. D. Hunter, of Tacoma, showed slides on fractures of the forearm.

Saturday, Sept. 22, 10:00 A. M.

Correction of Saddle Nose by Implantation of Elephant Ivory. Dr. Arthur Burns, Seattle.
Discussion: Dr. T. W. Kelsey, Spokane.

Fibrocystic Tumors and Diseases of Bones. Dr. Roger Anderson, Seattle.
Discussion: Dr. J. R. Morrison, Bellingham; Dr. Mitchell Langworthy, Spokane.

Compensation Neurosis. Dr. George Price, Spokane.
Discussion: Dr. S. E. Lampert, Spokane; Dr. C. A. Smith, Seattle; Dr. W. T. Williamson, Portland; Dr. H. W. Coe, Portland.

1:30 P. M.

Thymus Gland Enlargement in Infants. Dr. E. J. Barnett, Spokane.
Discussion: Dr. H. H. Skinner, Yakima; Dr. Robert Kearns, Spokane; Dr. P. D. McCornack; Spokane; Dr. C. B. Ward, Spokane.

Gallbladder Complications. Dr. J. R. Morrison, Bellingham.
Discussion: Dr. J. C. Lyman, Walla Walla; Dr. L. Palmer, Seattle.

Goiter. Dr. T. M. Joyce, Portland.
Discussion: Dr. John Hunt, Seattle; Dr. J. C. Moore.

KING COUNTY MEDICAL SOCIETY

Pres., C. E. Hagyard, M. D.; Secty., R. F. Hain, M. D.

The general meeting of King County Medical Society was held at the Public Safety Bldg., Seattle, Wash., 8:00 P. M., Dec. 3, 1923; Pres. C. E. Hagyard presiding. Minutes of the previous meeting were read and approved.

Mayor E. J. Brown addressed the meeting urging the society to sponsor a new county-city hospital to contain 1000 beds.

Social Medicine in Norway, Dr. Torleif Torland, Discussion: Dr. C. A. Smith and Dr. H. D. Dudley.

Railroad Spines, Dr. Roger Anderson. Discussion: Drs. H. D. Dudley, M. G. Sturgis, J. H. Snively, H. T. Buckner and H. J. Wyckoff.

Recently we have heard much about hysteria, compensation, neurosis and psychoanalysis and there has been a resulting tendency to diagnose and treat most of the accident cases from a psychologic standpoint. The purpose of this paper is to prove that many accident cases with few or no physical findings, while working for a large corporation, are not "railroad spine" cases but true cases of fractured spines. Fractures and even marked dislocations can be present without marked symptoms, especially without cord symptoms. After an injury resulting in a fracture of the spine, the patient may have a clear interval of months without symptoms, when later some trivial injury may precipitate an avalanche of symptoms. Dislocations of the spine are never present without an associated fracture. Diagnosis depends chiefly on good stereos and lateral views, but the important factor is the correct interpretations of the x-rays.

PIERCE COUNTY MEDICAL SOCIETY

Pres., J. P. Kane, M.D.; Secty., W. B. Penney, M.D.

The regular meeting of Pierce County Medical Society was held in its rooms, Tacoma, Wash., Nov. 27, 1923, President Kane in the chair. Minutes of the last meeting read and approved.

PROGRAM

Side Lights on Medical History, Dr. Marion Sims, Dr. C. C. Leaverton.

Health Examinations, Dr. Paul Turner, State Director of Health. The value of periodic health examinations was explained. After discussion it was voted that the society be prepared to make examinations as requested.

Northwest Medicine, Dr. Clarence A. Smith. A sketch of the history and ideals of Northwest Medicine was presented. It was voted that the society go on record as favoring raising the subscription price of Northwest Medicine from $1.00 to $2.00 per year.

Dr. Kane spoke of the possibility of reviewing some of the books by local men that are sent to Northwest Medicine and having them placed in the local library. Dr. Smith said that this question would have to be taken up with the journal Board of Trustees.

The application of Dr. Gerald B. Smith was read and referred to the Board of Trustees. The transfer was accepted of Dr. A. W. Howe from Hennepin Co. Med. Soc. of Minnesota.

The annual meeting of the society was held in its rooms Dec. 11, Dr. Kane in the chair. Minutes of the last meeting read and approved.

PROGRAM

Side Lights on Medical History, Dr. Oliver Wendell Holmes. Dr. Kane introduced the subject with an extract from one of Mark Twain's writings. Dr. J. Locke gave an interesting account of the life and services of Dr. Holmes.

Dr. Dodds gave a report of the activities of the Library Committee for the year, and stated that about $200.00 had been collected recently.

Railroad Spines, Dr. Roger Anderson of Seattle. Evidence was presented that fractures and dislocations of vertebrae in many patients have been considered neurasthenic and without localizing nerve symptoms. His paper was illustrated with numerous lantern slides. The paper was discussed by Drs. E. A. Rich, H. G. Willard and C. D. Hunter.

Recent Advances in Anesthesia, Dr. John Lundy, of Seattle. An appeal was made for standardized anesthetics, with continuous records of blood pressure, pulse and respiration during anesthesia. He illustrated with charts, demonstrating this prognostic value. He also spoke of the advantages of ethylene gas. The paper was discussed by Drs. C. D. Hunter, James Egan and J. B. McNerthney.

Changes in the constitution and by-laws previously proposed were unanimously adopted. Dr. G. B. Smith was elected to membership. The following officers were elected for 1924: President, Dr. S. M. MacLean; Vice-President, Dr. Edwin Carlsen; Secty.-Treas., Dr. W. B. Penney; Trustees for two-year term, Drs. C. D. Hunter, H. J. Hards, Charles McCreery, D. H. Bell, Joseph Turner, H. S. Argue; Delegates to State Society, two-year term, Drs. H. G. Willard, J. P. Kane, Charles McCreery, J. R. Brown, W. A. Moore, S. M. MacLean, C. F. Engles, J. C. Bohn.

SPOKANE COUNTY MEDICAL SOCIETY

Pres., C. M. Doland, M. D.; Sec., G. H. Anderson, M. D.

The regular meeting of the Spokane County Medical Society was held Dec. 13, at 8:00 P. M., in the assembly room of the Old National Bank Building. The minutes of the previous meeting were read and approved.

Mr. Cole, of the Internal Revenue Department, narcotic division, gave a short talk regarding his work and made an appeal that the doctors co-operate in the war against drug addiction.

Dr. F. B. Kistner, of Portland, Ore., read a paper on "Chronic Non-Tuberculous Bronchitis in Association with Infections of the Accessory Sinuses." Discussed by Drs. Sprowl, Aspray, Hilscher and Kistner.

The regular monthly clinical meeting of the society was held Thursday, Dec. 27, at the Sacred Heart Hospital. Minutes of the previous meeting were read and approved.

A motion was made to have a special meeting of the society to hear papers read by Dr. E.C. Kendall, of Rochester, and Dr. Dean Lewis, of Chicago, on Jan. 8 and 14 respectively. Carried.

A motion was made to approve the plan to enlarge the state journal, Northwest Medicine, and to increase the subscription fee from one to two dollars. Carried.

Dr. Langworthy showed a case of fracture of the femur and demonstrated the use of the Langworthy fracture fram and calipers.

Dr. R. G. Andres was unanimously elected to membership in the society.

STEVENS COUNTY MEDICAL SOCIETY

Pres., R. F. Goetter, M.D.; Sec., J. W. Henderson, M.D.

The regular meeting of Stevens County Medical Society was held in Colville, Dec. 5. The following were present: P. D. McCornack, Spokane; W. A. Cartwright, Valley; A. E. Baldwin, Kettle Falls; H. F. Craig, Marcus; W. A. Olds, R. F. Goetter, and J. W. Henderson, Colville.

In honor of Dr. P. D. McCornack, of Spokane, a 6:00 o'clock dinner was given at the Colville Hotel, after which the meeting was held in Dr. Old's office at 8:00 o'clock.

Dr. McCornack read a paper on "Problems in the Care of the Newborn," bringing out many important facts relative to diagnosis and treatment. The paper was fine from start to finish, and was enjoyed by all who heard it.

OREGON

PORTLAND CITY AND COUNTY MEDICAL SOCIETY

Pres., Geo. Parrish, M.D.; Secty., H. C. Bean, M.D.

Portland City and County Medical Society held its annual meeting at Portland, Dec. 19. Dr. George Parrish presided. Addresses were made by B. F. Irvine and Drs. Wm. House, J. E. Else, J. A. Pettit, W. T. Williamson, E. B. McDaniels, A. A. Wythum, E. A. Sommer and C. S. White.

The following officers were elected for the ensuing year: President, C. S. White; Vice-President, H. C. Bean; Secretary, K. T. Moran; Treasurer, Kitty P. Gray; Councillors, W. B. Holden, C. J. Smith, C. U. Moore, R. S. Stearns, R. A. Fenton, A. J. Browning, R. L. Benson, Frank Mount, T. H. Coffen, Paul Rocky, and H. S. Nichols. The following were elected delegates to the meeting of the State Medical Society: A. J. Giesy, A. C. Smith, N. W. Jones, C. E. Sears, E. A. Sommer, A. W. Smith, G. W. Millet, C. D. Bodine, W. B. Holden, Wilson Johnston, F. J. Ziegler, George Parrish, J. I. Pettit, and Fred Strickler

CENTRAL WILLAMETTE MEDICAL SOCIETY

Pres., W. H. Davis, M. D.; Sec. F. E. Beauchamp, M. D.

The Central Willamette Medical Society held its monthly meeting at Albany, Ore., Dec. 6, 1923. Various matters of business were considered. The question of industrial accident insurance and fees for the same were discussed and referred to committee.

The following officers were elected for the ensuing year. President, E. W. Howard, Corvallis; Vice-President, N. E. Irvine, Lebanon; Sec.-Treas., W. T. Johnson, Corvallis; Censor, W. H. Ross, Eugene.

Dr. Ross presented a case of pollagra of ten years standing, a woman age 28 years. He described the physical signs and gave the symptoms, the chief of which was looseness of the bowels and excessive rate of transit. It was found the bismuth meal required only four hours to reach the sigmoid.

Dr. J. T. Fox, of Harrisburg, presented a paper on the "Alimentary Canal, the Sigmoid Key." By the aid of a diagram he described the anatomy, physiology and functions of the different parts of the digestive tract. He paid special attention to the sigmoid and rectum as being important portions of this canal, the study of which has been neglected. He described various diseases located in the sigmoid and their treatment.

LANE COUNTY MEDICAL SOCIETY

Pres., A. H. Ross, M.D.; Secty., Gavin Dyott, M.D.

The society held its annual meeting at Eugene, Ore., Dec. 20. The following officers were elected for the ensuing year: President, Dr. W. H. Dale; Vice-President, Dr. N. C. Nelson; Secty.-Treas., Dr. N. C. Zimmerman; Censor, Dr. F. E. Adams. Dr. W. B. Neal was elected delegate to the annual meeting of the State Society.

Dr. W. K. Livingston, of the University of Oregon Infirmary, read a paper on drug addiction.

IDAHO

SOUTH IDAHO DISTRICT MEDICAL SOCIETY

Pres., G. M. Waterhouse, Secty., F. W. Almond,

The fall meeting of this society was held at Weiser, Dec. 20. A large attendance was recorded from adjacent cities.

The following program of papers was presented:

Relationship of Dental Infection to Systemic Diseases, by Dr. Jefferson, of Weiser. Discussion lead by Dr. J. H. Cardwell, Boise.

Modern Use of Actinic Rays, by Dr. Woodward, Payette. Discussion lead by Dr. Frank Lamper.

Hare-lip and Cleft Palate. Dr. A. C. Jones, Boise. Discussion lead by Dr. C. C. Conant, Weiser.

Surgical and Allied Conditions of the Uterus, by Dr. J. L. Stewart, Boise. Discussion lead by Dr. Phinney.

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PUBLIC HEALTH LEAGUES

WASHINGTON

LEAGUE PLANS FOR THE NEW YEAR

In order that its lay members may have information of health issues, every fourth issue of the **Messenger**, the official monthly publication of the Washington Public Health League, will be a quarterly journal of health. The first issue of this journal appeared January first.

The February issue of the **Messenger** will be largely given over to a discussion of legislative matters. Another campaign looms ahead and it is necessary to take those preliminary steps which insure the right kind of health organization. The League is not a political institution, it is a big public health organization. As such, however, it is vitally interested in seeing men and women elected to legislative council who sense the importance of such issues and can be depended upon to vote right. The League strives to give protection to the public in all such matters by educational effort and where necessary by political action.

The last Washington legislature had five physicians as members. These men served on the important health committees and their advice was helpful in many ways. It is hoped that other physicians will get into the legislative race. Several dentists are expected to run this year and their aid will be valuable at Olympia.

The Public Health League of Washington is the first organization of any kind to initiate a state-wide campaign against goiter. Taking the results of experiments with fish and animals and later those obtained from widespread use of iodine as a public health measure in schools scattered thruout the country, the League last August began a drive to enlist Washington support for goiter prevention. Working thru the county medical societies, the press, county nurses and health officers and gaining the interest of parent-teachers' organizations, the campaign has been very successful.

It is estimated that more than 200,000 chocolate covered iodine tablets have been distributed in the state. The League has distributed nearly 100,000 of these tablets to local health organizations and authorities. More than a score of cities and towns have endorsed the drive and begun the iodine treatment, at least in part. Hundreds of meetings have been held in the various communities of the state and thousands of pamphlets have been distributed.

The officials of the League are gratified at the fine results attained at the outset of the campaign. The next school year will see other communities availing themselves of this opportunity of health protection. The citizens of Washington have been awakened to the seriousness of the goiter situation and are anxious to cooperate with the medical profession in this wide prophylaxis effort.

Plans are being laid to establish a nurses' bureau in the League organization. When this is accomplished carry definite membership contact between the physicians and surgeons, dentists, pharmacists, nurses and laymen. Here is the first real opportunity for understanding and cooperation between these great forces in Washington. The dentists have arranged to begin publication of a monthly magazine on February first, and the League has been offered space in it. The Washington State Pharmaceutical Association has also offered to give information of League activities to its members thru its service bulletin and other publications. In this way, reaching out to all these professions, supplementing its publicity thru the press and by various pamphlets and booklets, will the League be able to better establish plans and policies of health protection.

IDAHO

TWO SOCIETIES VOLUNTARILY RAISE DUES

At a meeting of the Canyon County Medical Society, held in Nampa, Oct. 3, the society unanimously passed a resolution endorsing the Idaho League, voluntarily raising their league dues from $3.00 to $5.00 a month. All physicians of this county endorsed the resolution with their check books except one, and he is not a member of the League.

At a meeting of the South Idaho District Society, held in Weiser, Dec. 20, the society duplicated the action of the Canyon County Society by unanimously endorsing the work of the League and voluntarily raising their league dues from $3.00 to $5.00 a month.

LEAGUE SAVES HOSPITALS $3,200

The Assessor and County Commissioners of Canyon County assessed the Mercy and Nazarene Hospitals together $3,200, for the year 1923. Immediately on being informed, the League, with the assistance of the physicians of Nampa and Caldwell, began to get busy and on Dec. 5 the county commissioners rebated the total tax. This instance alone shows that the League is a mobile and militant organization, ready to strike at any place where public health is endangered. If this tax had been allowed to stand, it would have established a precedent, the consequences of which might have reached other counties The taxing of these two hospitals was striking at the very vitals of public health.

SPEEDING UP COMPENSATION CLAIMS

It has been the policy of the Idaho League for the year 1923 to bring to the attention of its members the new procedure promulgated by the manager of the State Insurance Fund. This is an economic question. Soon after taking the office of State Insurance manager, Mr. Yager, upon advice of his attorneys, changed the system pertaining to the paying of physicians having claims against the Fund. In the past all claims against the Fund were paid by the manager; under the new system all physician's claims must go before the State Board of Examiners. This Board is composed of the Governor, Attorney General and Secretary of State. This new procedure is rather complicated and burdensome. It has simply added more red tape.

The League has secured from the manager certain and a "lay" division is also created, the League will instructions or rules which, if followed by the physicians of the state, will speed up their claims. These instructions are as follows:

RULES FOR REPORTING INDUSTRIAL ACCIDENTS TO STATE INSURANCE MANAGER

ATTENDING PHYSICIAN'S REPORTS

1. After rendering first aid to any injured workman who is protected by insurance in the **State Insurance Fund** the case should be reported to the **State Insurance Manager** immediately by filing with him your "Attending Physician's Report" in duplicate. The injured man cannot receive compensation due him until such report is made by you.

2. An estimate must be made in this report of the length of the disability likely to result from the injury.

PHYSICIAN'S SUPPLEMENTAL REPORTS

3. In case the disability extends more than four weeks file a supplemental report of the injured man's condition at intervals of two weeks after the expiration of four weeks until recovery is complete.

FINAL REPORTS AND FEE BILL

4. Upon the patient's recovery your Final Report and Fee Bill should be filed immediately.

Where No Permanent Disability Results from the injury be sure to state "NO" in answer to question 6.

Where the Injury Results in a Permanent Disability the final report must state definitely the date on which the patient was able to resume work.

If the Permanent Disability Consists of Dismemberment the report should clearly indicate at what point amputation was made and the specific member amputated.

If the Permanent Disability Consists of a Partial Loss of Function of a Member, the Final Report must contain an estimate of the extent of the disability in terms of percentage as compared to the loss of the member by amputation.

Where the Permanent Disability Does Not Involve the Loss of Function of any Member of the Body but Has Resulted in a Permanent Impairment of Earning Capacity, the extent of such disability must be compared to the loss or partial loss of some member of the body which loss would, in your opinion, cause a diminished earning capacity equal to that caused by the patient's injury.

Loss of Hearing. If the injury results in a partial loss of hearing the percentage of the loss of hearing in the affected ear must be given.

Loss of Vision. If the injury results in a partial loss of sight, Snellen's Chart test of the vision remaining in the affected eye must be given. (The percentage of loss of sight is determined by the Industrial Accident Board from the test given by the attending physician.)

A STRICT OBSERVANCE OF THESE RULES WILL

1. Reduce correspondence to a minimum, thereby saving trouble for the doctor and facilitating the handling of claims by this department.
2. Insure prompt and regular payments of compensation to the claimant and bring the claim to a final adjustment at the earliest possible time
3. Make possible the payment of your bills with the least delay.

Do not wait until you receive a letter from this department asking you to report the case. Make your reports in accordance with above regulations.

Keep a supply of all necessary blanks on hand. When same are exhausted, a card directed to the State Insurance Manager will bring a new supply.

DO NOT HESITATE TO WRITE TO THIS DEPARTMENT
WHENEVER NECESSARY

HOSPITAL STANDARDIZATION

Edited by HERBERT E. COE, M.D.

WHAT IS AN INTERNE?

Along with hospital standardization has come standardization of hospital interne service. A committee of the A. M. A. will tell the senior medical student what institutions are satisfactory and will tell the hospital certain things which are expected of it, such as laboratory instruction, lectures by the staff, review of histories and physical examinations, access to a medical library, lectures by physicians, presentation of cases at clinical meetings, bedside instruction, etc. All these things can be done according to the letter of the rule, but without the enthusiasm which a teacher should manifest toward a student.

The old conception of an internship was to turn the new graduate loose in the hospital with the idea that there is material at hand and, if the young doctor is any good, he will study some of the cases. If he is a loafer, the visiting men will lose interest in him and disregard him. That day is past. We are confronted by two facts. (1) Many states require at least one year of postgraduate internship before the doctor is eligible to take the state board medical examination. (2) Many schools withhold their medical degree until one year's internship has been successfully completed. These two facts make the interne's year in the hospital his fifth year of medical instruction. Many schools rigorously investigate hospitals where their graduates are located and investigate the grade of work done there by their students.

Hospital staffs have a twofold duty: (1) to give the required instruction and supervision, and (2) to see to it that the interne does his work. The lazy or careless interne should not be allowed to continue in his slipshod ways, for from such we shall produce slipshod doctors. The hospital must realize that it is an institution, where the interne is in fact a fifth year medical student. The staff must realize it is the faculty of that postgraduate medical school. Each doctor sending a case to the hospital should realize his obligation to the interne. The mere explaining of a case, no matter how simple, the discussion of the reasons for certain treatments, the loan of a book, magazine or reprint bearing on the case, the outlining of the technic of an operation, all these will make for an improved personnel and an increased loyalty to the hospital on the part of the interne staff. More than that, the attending physician will find that in so doing he is making himself more careful in his diagnosis, treatment and technic and that he is giving his patient better service.

If the attending physician will introduce the interne to his patient, the latter will be gratified to know that his doctor has a medical representative who lives in the hospital. If the interne comes upon the patient without a word from the attending physician, he may be regarded as an intruder. In teaching hospitals associated with medical colleges, where free beds predominate, the situation is easy. In private hospitals there will be no difficulty, if the visiting doctors are just a little generous and mindful of their obligations.

Is the interne in the hospital merely to write our histories, make our night calls, assist in operations where convenience indicates? No; he is our representative when we are not there. Is the interne merely a high grade orderly to do our catheterizing and dressings? No; he is our student and we are his preceptors. Is the interne to read accidentally on the chart that there has been a consultation on a case? No; he is to be present at the consultation and write the findings of the consultant. Is the interne to learn by accident that the charge nurse has summoned a doctor because a case has had new alarming symptoms? No; he is the first doctor summoned to the bedside and it is he who has called the attending physician. No physician can turn his private cases over to the interne; but he can make the interne his associate or assistant in practically any case and secure a cooperation which will help in training the men and women who are to be the doctors in the very near future. If the interne is not worthy of such cooperation, he is not fit to practice medicine later and should be removed. If the proper relations obtain between the doctor and the interne, it will surely follow that a marked benefit will accrue to the hospital, to the attending physician, to the interne and to the patient.

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

The Prevention of Disease in the Individual. By Kenelm Winslow, B. A. S., M. D. Attending Physician to Seattle City Hospital and King County Hospital, Washington, etc. Second Edition. Thoroughly Revised. 427 pp. W. B. Saunders Co., Philadelphia and London, 1923.

It is a satisfaction to review this book, writen by the editor of book reviews of this journal. It is couched in unusually pleasing language which affords attractive reading. While it presents much of interest to the physician, it is intended primarily for the instruction of the layman. It does not offer to the reader methods of treating disease, but rather means of avoiding such. Before dealing with prevention the author presents valuable information on a variety of familiar subjects. In the chapters on personal hygiene he discusses such every-day matters as care of the teeth, the value of foods and their relative importance, baths, care of the hair and even of toenails. He offers wise suggestions regrading the use and abuse of alcohol, tobacco, tea and coffee. The chapter on prevention of sexual diseases and sexual hygiene treats these delicate matters most admirably. Its careful perusal would be of distinct advantage to youths emerging from adolescence and young people contemplating matrimony. The mother will obtain much comfort from the discussion of prevention of diseases among children, offering suggestions as to food and methods of rearing the youngsters. Discussing prevention of diseases of digestion, it is explained how the ordinary individual employs this term for disturbances of the gallbladder, appendix or kidney more commonly than of the stomach per se. A wide variety of disease conditions are touched upon, all of which will convey important information to the layman. This is a volume a physician can safely recommend to his patients. SMITH.

The Examination of Patients. By Nellis B. Foster, M.D., Associate Physician to the New York Hospital; Associate Professor of Medicine at Cornell University, College of Medicine. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Cloth $3.50 net.

This is a book on physical examination and diagnosis. It is written from the standpoint of the practical clinician and does not cover all the rarer diseases in diagnosis. But it possesses that most valuable quality that everywhere emphasis is placed upon the essential, as determined by the experience of a trained clinician. Thus, in estimating the value of the examination of stomach contents the author sees no great worth in the fractional method and notes that the determination of acid has no pathognomonic significance. In more than a quarter of cases of gastric cancer the acid is normal or above, while in only half the cases is there achlorhydria. The x-ray has greatly reduced the value formerly attributed to gastric analysis, gastroenterologists notwithstanding. The Lyon method of diagnosis by obtaining the A. B. C. bile is described but not evaluated.

The author describes what may be determined by examination of various parts of the body, as the rectum, genitourinary apparatus, vagina, etc. The summary is concise and well considered. In other chapters the study is of diseases of the different systems, respiratory, circulatory and digestive, nervous, etc. The writer says that the most important lesion to feel for in the rectum is stricture from lues, tuberculosis or cancer. Only after long continued ulceration do we find luetic stricture and in 95 per cent of cases a new growth or stricture in the rectum means malignancy in the opinion of the reviewer. The examination of the nervous system is particularly thoro. WINSLOW.

Alcohol and Prohibition in Their Relation to Civilization and the Art of Living. By Victor G. Vecki, M. D. San Francisco, Calif. 165 pp. $2. J. B. Lippincott Company. Philadelphia and London, 1923.

A chapter is devoted to the effects of the abolishment of the sale of alcohol, followed by another which quotes from many authors, demonstrating its usefulness in many conditions of disease. The greater portion of the volume is devoted to a discussion of prohibition, the evils which have ensued being largely maintained by quotations from San Francisco and California newspapers, detailing excesses and the alleged increase of drunkeness as a result of this measure. The author is quite convinced that prohibition cannot be enforced, as indicated by its constant evasion in various parts of the country. He considers that the anti-alcoholic resolutions passed by the A. M. A. in 1917 to satisfy the demands of 400,000 ladies of the W. C. T. U. was perhaps the most active agency in putting over the prohibition amendment. His conclusion is that the whole matter should be determined by means of education. The dangers of alcoholic abuses must be impressed upon the child's mind in the public school. He does not think the question of the use of alcohol will be definitely and rightly determined until the facts, not exaggerations, are brought to the attention of the public. SMITH.

General Medicine. Practical Medicine Series. Vol. 1, Year Book Publishers, Chicago, 1923.

It is noted by Davis and Pilot that the organisms of Vincent's angina are to be found in the tonsils, on the gum line and about the prepuce and clitoris. This explains the specific infection in chancroids which the authors do not mention. Paterson and Smellie are quoted in regard to the effect of vaccines in pertussis. In 10,000 cases so treated they find no prophylactic or remedial effect of value and discredit vaccine therapy. The review of pulmonary and heart diseases is very complete. Specific treatment of syphilitic heart and aortic disease is shown to be dangerous, unless given in very small dosage, and often in aortitis the absorption of exudate will precipitate aortic dilation and aneurism. The reviewer has seen only harm follow vigorous antisyphilitic treatment in syphilitic hearts. There is very extensive reference to the article of Christian in Northwest Medicine Sept. 22 on the subject of nephritis. The summary of progress in gastrointestinal diseases is excellent with a thoro review of the status of ulcer and comments thereon by Sippey. The tendency toward medical treatment becomes more and more evident in literature.

There is no publication in which a general review of medical progress may be found in a more concise or well selected summary WINSLOW.

Rubber and Gutta Percha Injections. By Charles Conrad Miller, M.D., 99 pp. $1.75. Oak Printing & Publishing Company. Chicago. 1923.

The purpose of this little volume is to advocate the use of rubber and gutta percha in subcutaneous injections for raising the depressed nasal bridge and altering external contours The author recites the objections and failures in the use of paraffin for this purpose. He describes the use and the preparation of rubber and gutta percha which he claims to be ideal, simple and without objectionable results. The method seems to possess possibilities. The author states, however, that for the present patients should be told that these methods are not as yet reconized as established surgical procedures.

Diseases of the Skin. By Richard L. Sutton, M. D , Professor of Diseases of the Skin, University of Kansas, School of Medicine. Fifth edition. Revised and Enlarged with 1069 illustrations and 11 colored plates. 1214 pp. $10.00, C. V. Mosby Co., St. Louis, 1923.

The appearance of a fifth edition of this work about two years after the last is in keeping with the advances made in dermatologic research. The increased size of the work demonstrates the care with which it has been revised. Descriptions appear of no less than thirteen new disease entities, and many old subjects have been revised and rewritten. Th bibliography is much augmented. It is a splendid work.

CRABTREE.

Principles of Vital Statistics. By I. S. Falk, Ph. D., Department of Public Health, Yale University. Octavo of 258 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Cloth $2.50 net.

The author aims in this volume to avoid theory and methods, devoting himself to the results of vital statistics. There is a description as to what are statistics, also a chapter on census and its relation to the population. Other chapters deal with birth rates, infant mortality, morbidity, and mortality with the causes of death. An important chapter consists of the interpretations of statistics, pointing out common errors and fallacies. One interested in vital statistics will obtain much information from this volume.

A Primer for Diabetic Patients. A brief outline of Diabetic treatment, including directions for the use of Insulin, Sample Menues, Recipes and Food Tables. By Russell M. Wilder, M. D., Mary A. Foley, and Daisy Ellithorpe, Dietetians, The Mayo Clinic. Second Edition, Reset. 12 mo of 119 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $1.50 net.

This little volume originated at the Mayo Clinic in response to the need for an outline of the principles in the dietary treatment of diabetes in the daily instruction of patients. It is in no sense a treatise on diabetes. Introduction of insulin is the chief reason for this new edition. The first chapter discusses what is diabetes, followed by one on urine and its examination. There are chapters on food values with a description of calories and the different kinds of foods. Insulin and its use are described. There is an abundance of menus and recipes. It is an instructive volume for the physician as well as the patient.

Rhus Dermatitis. From Rhus Toxicodendron, Radicans and Diversiloba (Poison Ivy). Its Pathology and Chemotherapy. By James B. McNair, 298 pp. University of Chicago Press, Chicago, Ill. 1923.

The author states that of all cutaneous eruptions caused accidentally by plant substances that produced by different species of rhus is the most common in this country. He has attempted to isolate the principal skin irritant of the plant, the knowledge of which might serve as a basis for treatment. He considers the history and distribution of the different forms of the plant in the various states. The morphology and the anatomy of the varieties are given with illustrations. There is a discussion of the resins and poisons of the different varieties with their chemistry. Differential diagnosis is described and internal poisoning effects. The description of treatment requires seven pages to enumerate remedies culled from medical literature. A chapter is devoted to the author's view of the chemotherapy of rhus dermatitis and his suggested method of treatment. There is much obtainable in the book for one desiring full information on this very common disorder.

SMITH.

Diseases of the Skin. By Frank Crozer Knowles, M. D., Professor of Dermatology, Jefferson Medical College, etc. Second edition. With 229 illustrations and 14 plates. 555 pp. Lea & Febiger, Philadelphia and New York, 1923.

This book is well written and of attractive appearance. It appears in competition with many excellent works on the same subject by both American and European authors. It covers the field of diseases of the skin and is a creditable working textbook for undergraduates and general practitioners. It is evidently intended for this purpose and well fulfills these conditions. CRABTREE.

Diagnostic Methods. By Herbert Thomas Brook, A.M., M.D., F.A.C.P. Professor of clinical medicine, College of Medical Evangelists. Los Angeles, Calif., etc. Fourth Edition. With 52 illustrations. 109 pp. $1.75. C. V. Mosby Co. St. Louis, 1923.

This is one of the most useful volumes of its kind. It begins with an outline for history taking, followed by directions as to physical examination of the patient. There are chapters on sputum, urine, gastric contents, blood, intestinal contents, as well as other subjects. Every examination described is concise without discussion or comparison with other methods. It is one of the best working monographs for the general practitioner.

Obstetrics and Gynecology. By J. M. Munro Kerr, M.D., F.R.F.P. and S. (Glas.), Professor of Obstetrics and Gynecology, Glasgow University, etc. James Haig Ferguson, M.D., F.R.C.S. (Edin.), Gynecologist Royal Infirmary, Edinburgh, etc. James Young, D.S.O., F.B.S.C., (Edin.), Assistant Physician, Maternity Hospital, Edinburgh, etc. James Hendry, M.A., B.S.C., M.B., Senior Assistant to the Muirhead Professor, University of Glasgow, etc. 474 Illustrations. 1006 pp. $10.00. William Wood and Co., New York, 1923.

This volume is an attempt to correlate more clasely obstetrics and gynecology. The authors are of the opinion that a combined textbook on these two subjects will impress the medical student and practitioner alike with the importance of a thoro knowledge of obstetrics, and with the fact that the ma-

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jority of ailments encountered in gynecologic practice are the result of infections and injuries contracted during parturition. A little more than one-half of the book is devoted to obstetrics and the latter half to gynecology. The subjects are necessarily rather brief, but the brevity is made up by the profusion of illustrations and the clarity of the text. The subject matter is rather typically British and many therapeutic agents are given foremost rank which in this country have been relegated to a secondary importance. As example may be mentioned the use of the intrauterine douche in postportum hemorrhage. A chapter on diseases of the rectum and pelvic colon is included under gynecology which, owing to intimate relationship of pelvic lesions, is a very important adjunct to the gynecologist. The reviewer feels that any member of the profession may well profit by an edition of this character, combinin gas it does two such closely relaed subjects in one volume.

Charles D. Schannon

International Clinics. Volume III. Thirty-third Series. 1923. J. B. Lippincott Co. Philadelphia and London.

Van Leeuwen of Leiden comes first in this volume with Therapy of Allergic Diseases. The allergic diseases are asthma and hay fever and, in some cases, urticaria, eczema, migraine and epilepsy. The reaction of a patient to the injection of human dandruff extract is the criterion of allergy; if he reacts he is an allergic. The author postulates that benefit derived from injection of specific proteins is not due to their specificity but to the fact of production of allergy or reaction to foreign proteins. He bases his treatment in allergic diseases on Pfeiffer's observation that injection of serum or other foreign proteids will protect animals for a time against injection of lethal bacteria. In other words, that an animal will not succumb to more than one allergic reaction at one time. The production of one with a comparatively harmless foreign protein will protect the patient from his disease. On the other hand, small doses of allergins are inactive, larger ones protective against allergic diseases, still larger aggravate allergic diseases and may be very toxic. The crux of the matter is the question of dosage. The author differs from most in affirming that hay fever patients should not be immunized with pollen injections in advance of the seasonal onset lest the injected pollen, plus that in the air, may precipitate an attack. He considers large doses of specific proteins more dangerous than large doses of nonspecific proteins.

Treatment of allergic diseases is simple. The causative agent must be avoided if possible and treatment begun with injection of such proteins as milk or tuberculin. Eventually the causative agents may be injected. The details of treatment are most meticulously described. The role of nonspecific foreign proteins in affording protection against disease as compared with specific treatment is most interesting and important. Van Leewen's work has attracted the attention of the medical world for some time and his second paper in this volume will be eagerly read. We have ourselves been carried away by it at the expense of many other contributions in this volume of equal worth. But International Clinics has become a medical institution and needs no eulogy to attest its excellence.

—Winslow.

The Medical Clinics of North America. (Issued Serially, one number every other month.) Volume VII Number 3, November, 1923. (Boston Number.) Octavo of 421 pages and 66 illustrations. Per clinic year (July, 1923, to May, 1924). Paper $12.00! Cloth, $16.00 net. Philadelphia and London. W. B. Saunders Company.

This number contains clinical reports on various aspects of many common diseased conditions. A variety of pathologic states of the heart and arteries are presented in reports by Christian, Wood and White, Jackson, Berry and Reid. Joslin presents several clinical reports dealing with different phases of diabetes. Diagnosis of diseases of the gallbladder is exemplified by reports of McClure and White. Many other equally interestin gclinical reports are presented.

The Surgical Clinics of North America. (Issued serially, one every other month.) Vol. III. No. 6. (Kansas City number, December, 1923.) 285 pp. Per Clinic year (Feb., 1923, to Dec., 1923,), paper, $12.00; cloth, $16.00 net. Philadelphia and London. W. B. Saunders Co.

The surgeons of Kansas City present the clinical reports in this number. Most of the contributors describe a series of surgical pathology and their treatment. Wahl has a paper on tuberculous salpingitis, based on a series of ten cases. Burns has a paper on diagnosis and treatment of calculi of the kidney and ureter with citations of cases, which throws much light on these problems. Many other valuable surgical discussions are offered.

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ORIGINAL CONTRIBUTIONS

THE DIAGNOSIS AND TREATMENT OF SYPHILIS *

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For several years past the subject of syphilis has been intensively studied from a scientific viewpoint and the social aspect has not been neglected. Beginning with the successful animal inoculations in 1903 by Mechnikoff and Roux, followed by the discovery of spirocheta pallida in 1905 by Schaudinn and Hoffman, and in the elaboration of the complement fixation test by Wassermann in 1908, the subject has been of world-wide interest. Add to this the discovery of arsphenamin in 1910 by Erlich, and it is at once seen that great progress has been made in etiology, diagnosis and treatment. The World War emphasized its importance from the social and economic standpoint and numerous organizations have been developed to combat the spread of the disease. On account of the nature of its chief mode of transmission, its eradication can hardly be hoped for, but that its ravages can be lessened and its prevalence decreased there is no doubt, providing certain measures are carried out. From the medical standpoint, the two things that are of paramount importance are early diagnosis and prompt and efficient treatment. It is to these subjects that the present paper is limited, as to attempt the discussion of the entire subject would require many hours in place of one.

For the purpose of study we divide the cutaneous lesions into two groups, early and late.

Early lesions comprise the primary lesion and the so-called secondary manifestations. The late ones are those occurring after several months or years.

The most important point relative to the primary lesion is its early recognition and this can only be done by a dark field microscopic examination of any superficial ulceration or abrasion occurring in the genital region. If sufficient time elapses for the lesion to assume clinical characteristics that are of diagnostic importance, it is too late then to save the patient from general infection. Not infrequently spirochetes are abundantly found on the second or third day of a comparatively, superficial, soft innocent-looking abrasion or ulcer. If the nature of the lesion is recognized at this time and treatment given, the disease can be cleared up soon without much difficulty. If the lesion has been present for twelve days or more, general dissemination probably has ensued and the chances for clearing the disease up soon are remote. In this connection it is the duty of medical men to impress upon druggists the injury they might do by treating lesions such as above described until it is too late to save the patient. Furthermore, the facts should be impressed upon people in general that such lesions should not be treated until after they are examined, as local treatment interferes with the finding of spirochetes. The various types of primary lesions need not be discussed as they are familiar to all.

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Extragenital lesions occur more frequently than is commonly recognized. A large portion of these we see in professional people. The common sites of these lesions are the fingers, lips, tongue, tonsil, eyelids and other portions of the face. A common portal of entry for the spirochete is an herpetic lesion. Any cold sore, therefore, that persists unusually long and becomes hardened at its base should immediately be suspected and examined. Any supposed ordinary infected lesion that persists more than ten days should excite suspicion. These lesions do not present definite clinical characteristics other than persistence and induration of the base. In the major portion of extragenital primary lesions, the local glandular involvement is marked. This is usually an important clinical symptom.

Since arsphenamin has been employed in treatment, numbers of instances of reinfection have been reported. Many of these are examples of superinfection. In true reinfection the disease runs its usual course, the primary lesion being followed by adenopathy and superficial eruptive manifestations. In the case of superinfection, there is a local lesion resembling a typical primary lesion, which in this case is the result of the growth of new spirochetes, implanted in a soil that is not favorable for the growth of the new germs on account of the fact that the old disease is still present. It, therefore, follows that there are no so-called secondary manifestations and the disease remains a purely local disorder.

A brief review of the cutaneous lesions follows. It is our custom to divide the lesions into classes, early and late, and place in the category of early lesions those that occur within a few months after the primary infection, all of which have characteristics in common. The lesions consists of macules, papules and pustules of varying types and characteristics. All of these lesions appear rather suddenly, are more or less generally distributed, are symmetrically placed, are superficial and are unaccompanied by any sensation and disappear of their own accord in a comparatively short time. The late lesions, on the other hand, consist of nodules, gummata and ulcers. They are localized in distribution, deeply seated, destructive and disappear only to reappear in new areas.

The macular lesions are the most important. Two main types are recognized, pigmented and erythematous. The pigmented variety is uncommon and occurs most always on the sides of the neck, tho other areas may be involved. These lesions occur independent of any others. The most characteristic lesion is the vitiliginous which consists of an oval area, depigmented in the center and hyperpigmented on the border. These lesions are readily distinguished from vitiligo and chloasma by their location and by the presence of concomitant symptoms of syphilis.

The common erythematous variety appears usually about six weeks after the primary lesion and is distributed over the trunk. The lesions may be abundant or few and commonly are dull red and are unaccompanied by subjective symptoms. In the so-called syphilitic roseola the color is bright red. Not infrequently at this time there is a slight pigmentation occurring about the corners of the mouth, extending onto the chin. This gives this area an unclean appearance. The macular syphiloderm clears up in the course of a few weeks even without treatment. Occasionally an eruption induced by copaiba or cubebs closely resembles the macular syphiloderm. This eruption is apt to be slightly papular, is of brighter hue, and is accompanied by itching. Rarely pityriasis rosea might cause some doubt, but here the presence of scaling readily makes the differentiation.

Papules may be divided into four types, large and small, flat and acuminate. The most important of these is the large flat papule, which presents the following characteristics: In the mouth and other moist places it occurs as mucous patches, about the anal and genital regions as condylomata. On the palms and soles, as the papulosquamous syphiloderm. On the trunk frequently as scaling lesions, resembling psoriasis. Frequently on the face about the angles of the mouth and also in some other areas these lesions clear in the center and produce the annular, papular lesion of the disease. The large flat psoriasiform papule of syphilis is distinguished from psoriasis by its indurated character and the presence of a collarette of scales around its margin. The scales in psoriasis cover the entire lesion and extend beyond the margin and are imbricated.

The small flat papule is not important and is usually present as a part of another eruption.

The small acuminate papular syphiloderm occurs in groups over the trunk and is very characteristic. The papules are small, pointed, dull red, unaccompanied by any sensation and are rather persistent.

The large acuminate papular syphiloderm is uncommon, and not infrequently occurs as a part of a mixed eruption.

The corymbose papular syphiloderm is commonly a relapsing lesion and, therefore, has characteristics of both early and late lesions. It consists of a large papule, surrounded by a group of small papules.

Moist papules of syphilis occur as mucous patches and condylomata. The former occur chiefly in the mouth, the latter on the skin, where two surfaces are opposed such as in the anogenital region, beneath the breasts and other areas in fleshy subjects. Mucous patches usually present a circumscribed excoriation or whitened area, likened to that produced by silver nitrate when applied to a mucous membrane. Occasionally a bluish-white glazed spot is present (opaline patch). Condylomata vary in size and contour. They have a broad infiltrated base and a secreting, papillomatous or verrucous crust-covered surface and excrete a foul smelling secretion. All moist lesions are very contagious.

The pustular lesions are divided simply into large and small, flat and acuminate and, on account of the resemblance to other cutaneous diseases, they were known as ecthyaform, impetigoform, varioliform and acneform. Postular lesions of syphilis are seen much less commonly now than in times past. These usually occur in cachectic individuals. The large flat pustular syphiloderm sometimes extends deeply and leaves scars. The distribution of all these lesions may be extensive. As a rule, however, they are more or less limited and may, as suggested above, occur as a part of a mixed eruption.

When crusts are superimposed upon each other and a shell-like appearance is produced, the lesion is called *rupiod.*

Late Lesions. As above noted, late lesions consist of nodules, gummata and ulcers. Naturally the last follows the first two. Probably the most important clinical diagnostic point about these lesions is their ability to heal in one area and appear in another, thus moving from place to place. It is to these late lesions that the classical terms of horseshoe shape, reniform and others have been given. There is usually a tendency for the lesions to arrange themselves in circles or segments of circles. Nodules occur more often on the upper part of the body of the patient, particularly on the face, while gummata select the lower portion. The latter when breaking down produce a soft mucopurulent material, while the nodules merely break down without fluid formation. Unlike the early lesions, these continue indefinitely but move from place to place as stated.

Diagnosis. The most important diagnostic feature of late lesions of syphilis are their ability to develop, remain a certain length of time and disappear of their own accord and reappear in new situations. This is true of nodules, gummata and ulcers.

Occasionally epithelioma has to be distinguished from a late lesion of syphilis and is readily distinguished by the above history. The epithelioma remains in the same situation, is more frequently a markedly indurated ulcer with little inflammation. It may be crust covered but its pearly margin is characteristic.

Lupus vulgaris occurs at an early age and like epithelioma remains in the same situation for years. Its nodules are small, soft and brown and are very different from those of syphilis.

Blastomycosis, with its sloping infiltrated margin in which miliary abscesses are seen and with the balance of the patch covered with verrucous or papillomatous lesions, often crust-covered and not infrequently presenting scars in the center, is readily distinguished from the late nodular or gummatous syphiloderm.

Wassermann Reaction. After years of employment of the Wassermann test, we feel that it is very valuable but should be regarded a symptom of the disease. A positive reaction is very valuable and means much to the patient, while a single negative reaction means but litle, particularly in a patient who has previously had the disorder. Local conditions alter the reaction and its complicated technic not infrequently leads to errors in conclusions. In case of doubt, the result of the test should be confirmtd by more than one observer and proved by other tests now being employed. Bearing in mind these facts, it is of great value and should be employed in all cases.

The luetin test, which was formerly regarded as being of value in the late and latent stages of the disease, has lost much of its value since it has been proved that similar reactions can be produced by injections of other substances (such as agar), and that a positive reaction can be had in patients not the subject of syphilis who have recently taken iodids. These facts have to be remembered, when employing this test, otherwise false conclusions might be arrived at.

Congenital Syphilodermata. The lesions of the skin that occur in congenital syphilis are similar to those found in the acquired form with the exception of bullous lesions. In addition to this, they follow no chronologic order of development. The most important diagnostic lesions are those that occur about the mucocutaneous orifices and those that occur on the palms and soles. Red infiltrated fissured lesions about the angles of the mouth with mucous patches within are very frequent. Mucous patches and condylomata also occur in other moist regions, particularly in the anogenital area. In a large proportion of patients an erythematous infiltration occurs over the palms and soles, which is followed by scaling. The macular lesions in congenital syphilis occur most commonly over the lower part of the trunk and buttocks and are of larger size than similar lesions in the acquired type. The bullae, above mentioned, are limited to the palms and soles as a rule and are characteristic in their limitation and in their being accompanied by other signs of the disease that could hardly be mistaken for anything else. The papules and pustles of congenital syphilis are similar to those seen in the acquired form with the exceptions above noted.

The late lesions in congenital syphilis consist of nodules, subcutaneous gummata and ulcers. These occur after the first year and sometimes as late as early adult life, and they are frequently very destructive. In severe cases they may occur in conjunction with lesions of the disease in the bones and other sites. Their particular characteristics are not unlike similar lesions of acquired syphilis.

Treatment. The success of treatment depends largely on the date of its institution. If started before the disease has become generalized, that is before the twelfth day of the primary lesion, complete eradication can confidently be expected. The longer the disease has been present the less the chance is to completely eradicate it.

After twelve years experience with arsphenamin, we believe its use should be continued. Mercury, however, has a place and should be employed with arsphenamin. In certain instances potassium iodid also is of value. There is no method that can be employed successfully in every instance. Some rules, however, can be laid down and varied to meet special indications. The method adopted by the American Army Medical Corps is efficient and may be employed as routine. Our technic previous to 1917 was similar to this. That method consisted of five injections of arsphenamin given at five day intervals and twelve to fifteen injections of a soluble salt of mercury, or six to eight of an insoluble salt, then a rest of one month was given and the course repeated. At the end of this a second rest of two months was given and then the course repeated. After another two months rest, if any signs of activity remained, a fourth course was given. During the second year, if the Wassermann remained negative, two courses of mercury, consisting of twelve injections each of an insoluble salt, or twenty of a soluble salt were given, allowing four months rest between each course. If the test remained positive, arsphenamin was given in the same manner as it was the first year.

In 1917 a slight change in technic cleared up a number of cases which appeared to be Wassermann-fast. In these, three injections of arsphenamin were given the first week. This was followed by six injections of an insoluble mercurial salt. At the end of six weeks, three more arsphenamin injections were given at two day intervals. This was followed by twelve injections of mercury, again using an insoluble salt at weekly intervals. A rest of two months was given and the course of three arsphenamin during one week and the course of twelve mercurial injections, using insoluble salt as before. The patient then rested until the end of the first year. During the second year, if the Wassermann remained negative, which it usually did, two courses of mercury were carried out very much as in the preceding method. At the end of the second year, in either case, a spinal puncture is done and, if negative, a provocative injection followed by a Wassermann test is performed, and if everything is negative, the patient is given a prolonged rest. An examination every six months for another two years is suggested, even though the patient is clinically and serologically free.

The second method, above mentioned, has the advantage of employing the laboratory fractional sterilization theory, and in selected cases is probably the more valuable. Whichever method is selected, the first dose of arsphenamin should not be more than two-tenths grams. In the first method, after the first dose, full dosage may be employed, which ordinarily averages one decigram to each thirty pounds of body weight. In the second method, four-tenths grams is usually the maximum dosage, tho frequently in robust individuals a larger dose is employed. The modifications of the second method referred to are two extra injections of arsphenamin at five day intervals, following the three at two day intervals, and then going on with mercury as before suggested.

Complications that arise have to be treated according to their nature and the technic of treatment reorganized according to the findings. The urine is examined frequently during the treatment and, if kidney irritation is shown, naturally the treatment is changed. Albumin, due to syphilitic involvement of the kidneys, is not a contraindication to the use of arsphenamin, as it is very quickly cleared up with this agent.

In long continued Wassermann-positive cases, no definite technic can be outlined. It has been our experience that after a reasonable amount of treatment has been given, if the Wassermann still remains positive, involvement of the central nervous system has occurred and special treatment for this is then instituted. Where the central nervous system is free, the Wassermann may clear up after a long rest, provided treatment has been thoroly carried out over a considerable period of time. It is not necessary at this time to emphasize the importance of preparing the patient for arsphenamin injections by having the bowels thoroly moved previous to the treatment, having no food in the stomach at the time of its administration, and then having the patient rest several hours subsequent to its employment.

Reactions. Reactions following arsphenamin injections have been very greatly reduced but still occur. Methods for overcoming them have been devised which are important. The early vasomotor reaction, which occurs not infrequently before the patient leaves the table, is characterized by flushing and swelling of the face, suffusion of the eyes, dyspnea, and feeling of fullness in the head, constriction at the throat, precordial distress, and at times cyanosis with rapid and weak pulse. The administration of an injection of ten minims of 1 to 1000 solution of adrenalin is of service. This may be repeated if necessary. Nausea and vomiting occasionally accompany this early reaction. As a rule, with or without treatment it passes off in a short time. In other instances, several hours after the injection, a chill followed by elevation of temperature accompanied by nausea, vomiting, diarrhea, headache and pains in the limbs and back occurs. This even without treatment usually passes off within a few hours. During the first twenty-four hours various cutaneous lesions, such as urticaria, herpes, erythema, both simple and multiform, sometimes occur which also pass off in a day or two.

In certain other instances, reactions are delayed for several days. These are usually gastrointestinal in character but are sometimes accompanied by scarlatiniform or morbiliform erythema or icterus. In rare instances a general exfoliative dermatitis supervenes. This latter condition has been very severe in many instances, remaining for weeks and occasionally terminating fatally. A very valuable method of treating this condition has been recommended recently by McBride and Dennie, which consists of the intravenous administration of sodium thiosulphate in the following manner: 0.3 gm. of the drug is given intravenously the first day, 0.45 gm. the second, 0.6 the third, 0.9 the fourth, 1.2 the sixth, and 1.8 the eighth. This treatment has in many instances had a remarkable effect on the course of dermatitis. It is also of value in the management of stomatitis, due to mercury.

The other serious reactions, such as hemorrhagic encephalitis and neuroreccurrences, are fortunately very rare. The first has been decreased by giving a small dose of the drug at first and the second by using more intensive and prolonged treatment.

Herxheimer Reaction. Occasionally in early syphilis, immediately following the first injection of arsphenamin, all the lesions are exaggerated and sometimes lesions not visible at the time of injection appear. This renewed activity of the lesions is thought to be due to the action of the drug on the parasite, being somewhat similar to the activity of the lesions of tuberculosis after injections of tuberculin. Unless lesions exist in the nervous structures or blood vessels, no harm results and the reaction subsides in a day or two.

Treatment of Congenital Syphilis. The older methods of using mercurial inunctions and calomel or gray powder internally have largely been superseded by injections of arsphenamin and mercury. The technic suggested by Fordyce and Rosen has given excellent results and can be employed by anyone. The drugs are given in courses as follows: Six to eight injections of neoarsphenamin at weekly intervals are given. This is followed by six to eight of mercuric chlorid at the same interval. Both are given intramuscularly in the gluteal region. Neoarsphenamin is dissolved in freshly distilled water and administered in the following dosage: 0.075 gm. for infants three to eight weks, 0.1 gm. from two to six months, 0.15 gm. from six months to one year, and 0.15 gm. to 0.2 gm. from one to two years. The mercuric chlorid is given in dosage of one-tenth to one-eighth grain suspended in palmatin. This method of treatment has yielded excellent results and is not followed by any untoward results.

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AN ANATOMIC AND CLINICAL STUDY OF THE PROSTATIC URETHRA *

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The subject of this paper was prompted by several factors. First, because of the writer's hazy knowledge of the anatomic structures found in this region, as well as their relation to each other in health and disease: second, because it is essential to know the normal appearance of the prostatic urethra with its landmarks before the pathologic pictures can be interpreted and properly treated; third, because the development of the water-dilating cystourethroscope has made this region more accessible for study and treatment, and many new ideas have been developed since this instrument has been available; fourth, because heretofore the treatment for a chronic inflammatory condition of the prostatic urethra consisted of irrigations, dilatations, instillations, prostatic massage, sometimes topical applications; and it hardly seems logical that we should expect all these cases to respond to so mechanical a line of treatment; fifth, because our previous therapeutic measures are inadequate for the treatment of many of these lesions, and we must add apparatus for studying them for irrigating small dilated ducts and sinuses as well as high frequency machines with which to destroy products of a chronic inflammatory process.

Our knowledge concerning pathology of this region is meager excepting in surgical conditions, because in vivo this region was practically inaccessible for study and pathologists passed it up in postmortem examinations as uninteresting. The progress made since the development of the water-dilating cystourethroscope is chiefly confined to the prostatic urethra, where characteristic lesions have been demonstrated.

While direct inspection of the chronic inflammatory conditions of the prostatic urethra makes a very interesting study, the surgical conditions of this region with the same instruments will not be found lacking in interest. Heretofore in surgical conditions of the prostatic urethra, our studies were limited to the external margins of the prostate and some relative information, from which the diagnoses were made. The water-dilating cystourethroscope permits direct inspection of the entire field involved, gives us more direct information, and leaves less for deduction. This instrument is particularly useful, where the pathology is entirely confined to the prostatic urethra or is limited to its margin; where the postoperative conditions are unsatisfactory, and this particular region is at fault; where a study of the therapeutic measures employed is desired; and for removing small bodies which would otherwise require a major operation.

The prostatic urethra embryologically extends from the vesical orifice to the point, where the lowest prostatic tubule enters the urethra but arbitrarily its limits are the vesical orifice at one end and the deep layer of the triangular ligament at the other. It is made up of two portions, all of the true urethra and a small portion of the urogenital sinus. The true urethra is that portion which lies between the vesical orifice and the genital tubules (ejaculatory ducts) and is the homologue of the female urethra (Johnson[1]). The prostatic urethra tunnels the prostate from base to apex, the greater portion of the gland lying behind it. It is slightly concave in its longitudinal course and is crescentic in shape on cross section, the large fold making up the verumontanum being responsible for the latter.

For a description of the prostate the writer quotes freely from Quinby's article which appears in Cabot[2]: "The prostate is the most important of the male accessory genital glands. It is a musculoglandular organ, lying between the outlet of the urinary bladder and the triangular ligament, and enclosing within its substance the first or prostatic portion of the urethra and ejaculatory ducts. It shows a somewhat different morphology at the three periods of life, infancy, puberty and old age." Lowsley[2] and others have conclusively shown that the prostate is made up of five distinct lobes: "One group of glands and tubules takes its origin from the posterior midline of the urethra, just above the openings of the ejaculatory ducts, one on either side from each prostatic furrow and lateral uretheral wall, one from a point just below the ejaculatory ducts, and one from the anterior wall of the urethra, opposite the others. These form, respectively, the middle, two lateral, posterior and anterior lobes. The middle lobe tubules grow posteriorly between the ejaculatory ducts and the urethra. Those of the two lateral lobes also grow backward and later form almost the whole of the base of the organ. They are not separated from the middle lobe by an intraglandular capsule. The tubules of the posterior lobe, arising below the ejaculatory ducts, grow backward behind these structures and are definitely separated from the lateral lobes by a fibrous intra-

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* Read before Seattle Surgical Society, Seattle, Wash., Nov., 1923.

glandular partition. The anterior lobe tubules, few in number at any stage, gradually disappear, until at birth the lobe is represented only by two or three glandular masses. As a rule the lobe remains insignificant or it may disappear entirely. The gland as a whole is somewhat cone shaped. The average dimensions for the adult gland are 3.4 cm. in length; 4.4 cm. in width; and 2.6 cm. in thickness. It is firmly elastic in consistency. The base is about one-third wider laterally than anteroposteriorly. The anterior surface is flat centrally and becomes convex laterally. The two lateral surfaces are rounded. The posterior surface is triangular in shape, broader at the base, and has a shallow furrow in the midline near the base."

The muscular structures of this area are very important from a clinical and anatomic point of view, and Wesson[3] has recently made a complete study of these structures. The writer cannot improve upon his description, so quotes him almost verbatim: "The bladder has an interior circular and an external longitudinal layer of smooth muscle, which are not perfectly defined. Confusion is increased by the fact to which Howell[4] calls attention, that the direction of these fibres and the number of layers into which they can be separated depend to a large extent upon the state of distention of the bladder, as the muscle fibres rearrange themselves during changes in the size of the bladder.

"In the trigonal region there is in addition the trigonal muscle. This muscle consists of fibres extending fanwise from the ureteral orifices, some fibres passing medially, going to make up Mercier's bar, others interlacing with corresponding fibres from the opposite side in the middle of the trigone, and still others passing directly down the urethra and making up Bell's muscles. The Bell's muscles of the two sides converge at the vesical orifice, causing the trigonal muscle at this point to be denser and thicker. Where the thickened layer passes over the edge of the vesical orifice, it makes up the principal portion of the uvula of Lieutand. Below the vesical orifice the fibres pass downward along the urethra, thinning out to form an internal longitudinal layer on the floor of the prostatic urethra.

"Behind the interureteral ridge the circular layer of the bladder is made up of large loose bundles of muscle fibres, but as it passes under Mercier's bar, the character of the muscles changes and the bundles become smaller and more compact. Similarly the longitudinal bundles become more compact as they sweep beneath the trigone up toward the vesical orifice. They are surrounded by elastic fibres which, as the muscle tapers off and ends, pass on thru the circular layer, become lost at its upper edge. Their direction is practically perpendicular to that of the trigonal muscle. It appears as tho these fibrils form a sort of attachment or tendon for the muscle fibres which end in this region.

"The fibers of the external longitudinal layer sweep down along the surface of the bladder until they reach the region of the vesical orifice, where many of them end. The elastic fibres as mentioned above continue on and form a sort of tendenous arrangement, connecting with the denser layers about the vesical orifice. A portion, however, of these fibres, which sweep along the back of the bladder, are diverted from the general course of the other fibres, droping slightly away from the lumen of the bladder and passing forward between the prostate and the bladder mucosa. They diverge slightly to form muscular bands which pass forward and downward on either side of the urethra. At the upper level of the urethra these two bands swing medially and unite to form a loop or arch about the urethra. The fibres pass freely thru this loop and there is no raphe formation. The fibres sweeping down the anterior surface end for the most part, as described above, at the vesical orifice, but a few pass along the anterior aspect of the prostatic urethral mucosa, forming an internal longitudinal layer of the urethra, corresponding to the trigonal fibres on the posterior aspect.

"The circular fibres pass around the bladder until a point is reached just opposite the vesical neck. Here some of the fibres from the region posterior to the vesical orifices swing downward and forward in an oblique direction, passing as thin bands inside of the loop of the external longitudinal muscle described above, and swinging around the urethra in the region generally opposite the verumontanum, where they also form a loop or arch in front of the urethra. The arrangement leaves a short length of the urethra, extending from the vesical orifice about halfway down to the verumontanum, without any investment of fibres arising from the internal circular layer. Other fibres branching off from this band, as it passes downward and forward in its oblique course, extend into the prostatic gland. Their course cannot be followed among the prostatic tubules. It seems probable, however, that the prostate represents the posterior portion of this collection of circular fibres, extending down around the urethra, which has been invaded and distorted by prostatic tubules.

"At a point opposite the mediolateral aspect of the vesical orifice there may be found, lying in close relationship to the fibres of the sloop of the external longitudinal muscle, a few straited muscle fibres. These fibres are often quite close to the urethral mucosa, and even lie between the prostatic tubules. As they pass downward and forward, they increase in number until, at a point below the lower border of the loop where it passes in front of the urethra, they pass across the midline and form a sheath of striated fibres, running in a direction generally circular as regards the urethra, but extending only about half way around it. Following them downward, however, the fibres pass further and further dorsally until, at a point opposite the apex of the prostate, they join those from the other side in a raphe, thus forming from this point downward a complete circular sheath about the urethra. This system of straited muscle makes up the external vesical sphincter."

Another important structure of this region is the verumontanum and for this description Rytina[5] will be quoted.

"The verumontanum is a small rounded, oval, cliptical, or conical elevation, situated on the floor of the proximal half of the posterior urethra. Its posterior surface is sharply demarcated from the floor of the posterior urethra, whereas its anterior surface tapers gradually off into the crista galli. Occasionally it tapers gradually posteriorly, as it always does anteriorly. Its color is a pale pink and lighter in hue than the surrounding mucous membrane of the urethra. The verumontanum is separated from the prostate by the floor of the urethra and a few gland acini (suburetheral group of glands). Posteriorly it extends upward and fades off insensibly in the floor of the vesical neck by a number (about six) of longitudinal striae. On its anterior surface in the midline is an opening which is usually rounded, but may be slit like a quarter moon in shape and about one-eighth of an inch in length. This is the mouth of the sinus pocularis. At times the opening of the sinus pocularis may be found upon the superior rather than the anterior surface of the verumontanum. The base of the verumontanum is firmly attached to the wall of the urethra. Opening at a point in front, below, laterally or even posteriorly to the opening of the sinus pocularis and not necessarily bearing a symmetrical relation as regards position or shape, are the ejaculatory ducts which may be rounded or slit like the later, straight or concave. The latter may be so small and so flat that they cannot be seen with the naked eye. On the other hand, they may be so prominent that they are larger than the opening of the sinus pocularis."

METHODS

These studies were made by taking two readings of the field involved, and most of them in patients attending the Seattle City Hospital Clinic. The first readings were always taken with the Brown-Berger cystoscope, and the second with the Greenburg, direct-vision-water-dilating cystourethroscope. The Brown-Berger cystoscope readings are used as a standard because of its wide use, because of the accepted importance of cystoscope studies at the vesical orifice in prostatic lesions, and because the operator is more familiar with the readings taken with this instrument. The Greenburg cystourethrascope originally was used to take second readings for comparison, but later on for more complete studies. In a few instances, in a comparative short series of cases, the Brown-Berger cystoscope did not demonstrate pathology enough to account for the symptoms complained of by the patient, but the Greenburg cystourethroscope demonstrated the lesions conclusively. This is due to the fact that the Brown-Berger cystoscope permits a study of the extreme vesical end of the prostatic urethra only, while the cystourethroscope is adapted for studying the prostatic urethra from end to end.

The anesthetic employed at first consisted of 20 c.c. of a 4 per cent solution of procaine, injected into the urethra with a Chetwood bulb syringe and holding it in place for a short time. This, however, was not very satisfactory for the multiple cystoscopies required for the study, so that later sacral anesthesia, as suggested by Scholl[6] was employed, and found very satisfactory.

In order to have permanent records, suitable for comparing the readings, the most accurate and detailed descriptions are necessary, and for this reason graphic records, supplemented by verbal descriptions, were made at the time the readings were taken. This was done, first, because graphic records are most lasting; and, second, when making graphic records one observes more carefully. The cystoscopic chart described by Young[7] in 1903 was used for recording the Brown-Berger readings, and the Greenburg cystoscopic readings were recorded on a small chart planned by the author.

Fig. 1, A, is a normal record of the vesical orifice as observed with the Brown-Buerger corrected image cystoscope. Each segment or circle represents a portion of the orifice as the instrument is rotated, and each segment represents an angle of 45°. The other blank circles in the chart may be used for recording other pathology found at the vesical neck or in the bladder.

Fig. 1, B, is the graphic record of the normal Greenberg cystoscopic study of the vesical orifice and posterior urethra. The upper circles, arranged somewhat perpendicular to the main part of the chart, permit recording the ureteral orifices and the interureteric ridge with the surrounding bladder mucous membrane. The scope is then withdrawn a short distance until a small semicircular area comes into view, which is the inferior margin of the vesical sphincter. Then on withdrawing the scope a short distance farther, the mucous membrane of the posterior urethra folds over the end of the instrument and permits complete and direct inspection of this and each succeeding area of urethral mucous membrane. When the instrument is drawn out sufficiently far, so that a complete circle of the mucous membrane is in sight, the superior margin represents the superior border of the vesical sphincter. The two preceding views provide evidence that the sphincter is not at right angles to the urethra, but at an acute angle. The scope is then withdrawn until the vesical sphincter is completely closed. At this point the prostate forms an arch over the urethra, and the lumen is crescentric in shape, the floor of which is darker in hue, and contans several small ridges, the larger one of which is in the middle and leads to the verumontanum.

Occasionally the opening of a prostatic gland may be seen in this region. The scope is then withdrawn a short distance more and the verumontanum comes into view, the arch formed by the prostate being continued over this area, the utricle being easily visible. Close inspection of the veru, as reproduced in the succeeding circle, shows the relation of the utricle masculinus and the ejaculatory ducts, which may or may not be visible. The scope is then withdrawn a short distance farther, and the urethra becomes more circular in outline and the mucous membrane appears more relaxed.

On withdrawing the scope still farther, we come into the membranous urethra. At times it is possible to see small striations spreading out fan-wise, due to muscular fibres continuing from the verumontanum on the floor of this portion of the urethra. The mucous membrane of the trigone is darker in color than that of the remainder of the bladder. but is lighter than that of the urethra. The mucous membrane of the trigone is darker in color than that of the remainder of the bladder, but is lighter than that of the urethra. The mucous membrane covering the floor of the urethra appears darker than that covering the roof, the covering of the utricle itself being lighter in hue than the mucous membrane immediately surrounding it. The mucous membrane of the membranous urethra is decidedly darker in color than that of the prostatic urethra.

Fig. 2 is a comparative study of the vesical orifice of a man aged 58, complaining of difficult urination. There is no history of complete retention, frequency or urgency; there is a history dating back about a year of difficulty requiring considerable force with a slow, small, stream without force. A is the Brown-Buerger record of the vesical orifice, which shows a slight deformity at the posterior and right posterior segment, but not of sufficient importance to explain the pathology responsible for the symptoms at hand. B is the record made by reading this field with the Greenburg cystourethroscope. The view at the posterior margin of the vesical orifice shows a very decided nodule, about the size of a split pea, which moves to and fro in the dilating fluid. This is situated on the immediate margin of the sphincter. Its mucous membrane appears quite normal. This apparently is an enlargement of a subcervical gland. (Studies made under sacral anesthesia.)

Fig. 3 is a comparative study of the vesical orifice and prostatic urethra of a man aged 62, who has had complete retention on one occasion. There has been considerable frequency, nicturia (two to three times), some urgency and a small stream for a year or two. A is the Brown-Buerger reading of the vesical orifice with the ureteral orifices. This shows a decided cleft formation in the posterior segment, while the remainder of the circle appears quite normal in contour. The ureteral orifice can be seen on both sides.

B represents the reading of the vesical orifice and the prostatic urethra of the same individual with the Greenburg cystourethroscope. The first deformity appears at the inferior margin of the vesical sphincter, which shows the margin to be almost at right angles to the normal. The next view shows a decided cleft. On withdrawing the scope a short distance farther, the urethra takes the form of a cleft which is at right angles to the arch normally formed by the prostate. This cleft extends to the verumontanum and is longer anteroposteriorly at this point than at any other, measuring 2½ diameters of the instrument. The extra circles drawn at the side of the original chart represent studies of the prostate at the different levels of the cleft—the verumontanum itself, showing definite atrophy and being compressed by the pressure of the lobes of the prostate.

C is the digital examination of the prostate as made per rectum. The prostate is smooth, slightly larger than normal; elastic median furrow is obliterated, and there are a few adhesions to the pelvic wall on the left side. Fig. 3, then, is the graphic record of a typical benign prostatic hypertrophy as interpreted with both instruments, while the digital examination shows little enlargement.

Fig. 4 is the graphic reproduction of the studies of a man aged 54, complaining of difficult, frequent and painful urination. This patient gives a history of having had complete retention, noticed a decrease in the size of the stream, with nicturia and urgency. A is the Brown-Buerger study of the vesical orifice. There is no cleft formation, only a slight irregularity in the outline of the prostatic margin. The ureteral orifices and the interureteric ridge appear in their normal positions and relations to the vesical orifices.

B is a study of this same patient with the Greenburg cystourethroscope. There is no deformity seen at the vesical orifice and no cleft formation until a point is reached, where normally the sphincter is closed. At this point there is a definite deformity in the form of a cleft which is perpendicular to the normal crescentric shape of the lumen, and extends to the verumontanum; being more extensive just before the veru comes into view.

C is a digital examination of the prostate, extending to the pelvic wall on each side, being fairly smooth, not nodular, elastic and the median furrow is obliterated. This is an example where the Brown-Buerger cystroscope is too limited in its use to demonstrate the lesion. (Examination made under local anesthesia.)

Fig. 5 represents the graphic study of a patient who has been operated upon for benign prostatic hypertrophy, with a persistent suprapubic fistula. This patient was operated upon about four months before this study was made, and felt well, only that the suprapubic wound would not close. The Brown-Buerger scope discloses a marked irregularity and thickening of the vesical orifice without any definite cleft formation, the deformity being more marked in the posterior segments of the orifice. With the Greenburg cystourethroscope there is a definite deformity demonstrable after the scope is drawn completely into the prostatic urethra. This deformity is a cleft formation on the anterior surface of the urethra. After the scope is drawn beyond the cleft formation, there is a small dilation of the urethra and beyond this the urethra contracts to its normal size. (Examination made under sacral anesthesia.)

Fig. 6 is a Greenburg study of the prostatic urethra of a man aged 65, who has had three previous operations for benign prostatic hypertrophy within eighteen months. This patient's difficulty at the time of the study was frequent, painful and difficult urination. The study was made with a Greenburg

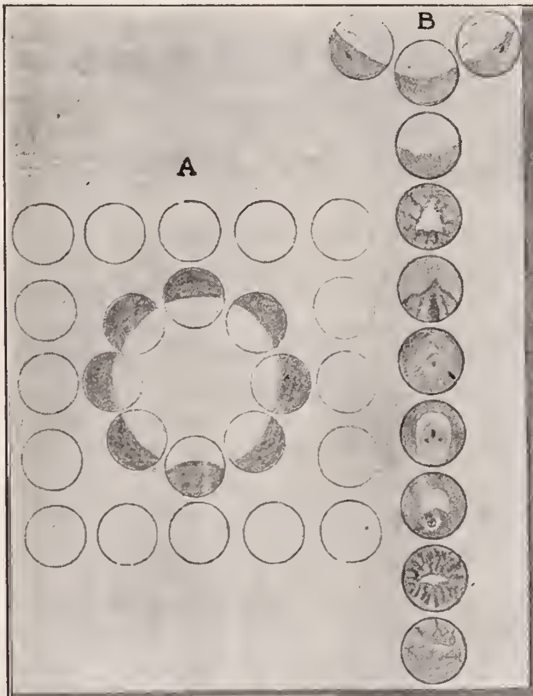

FIG.1

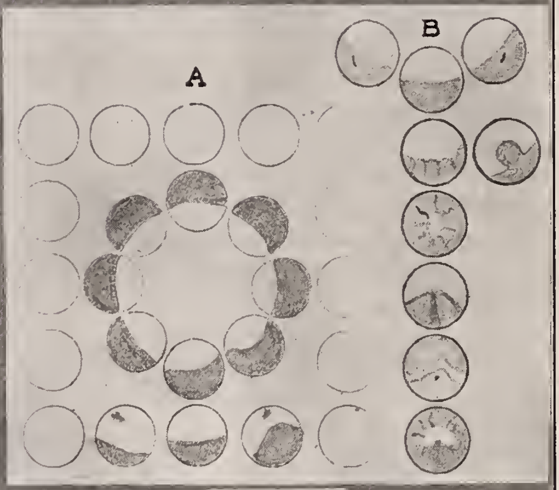

FIG.2

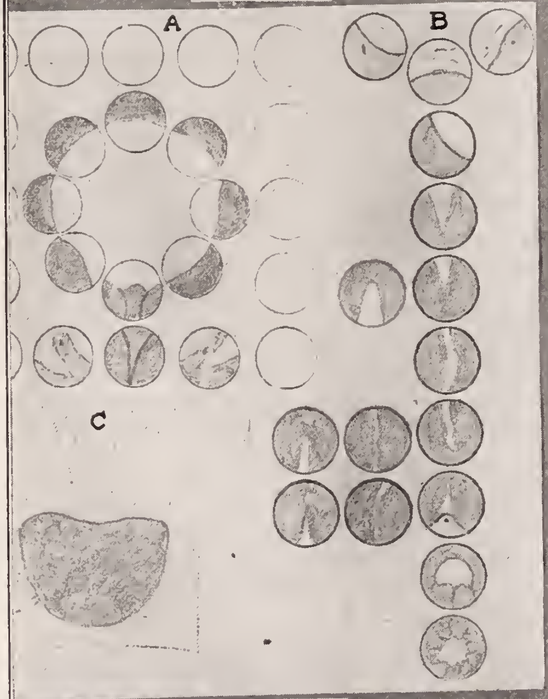

FIG.3

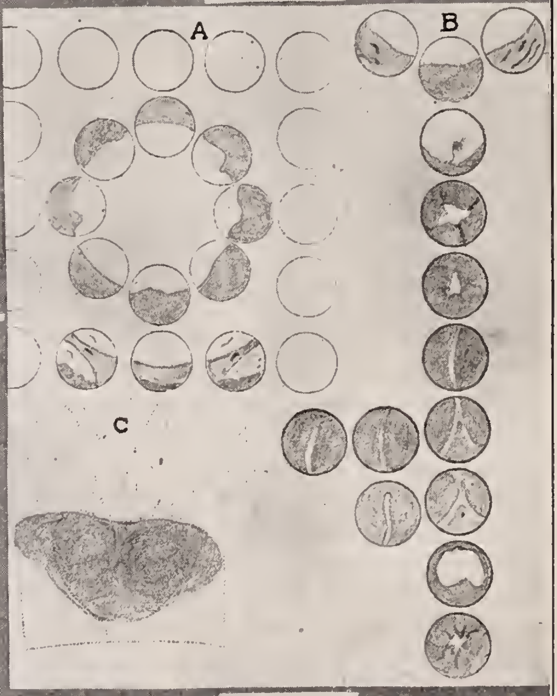

FIG.4

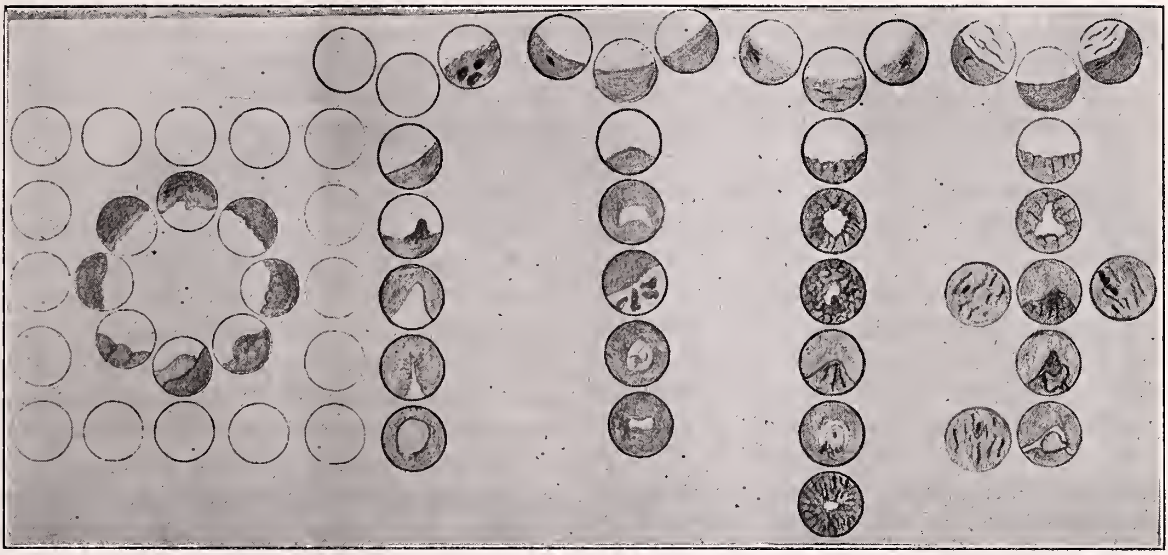

Fig. 5 Fig. 6 Fig. 7 Fig. 8

cystourethroscope because the Brown-Buerger cystoscope could not be passed. After the scope was passed into the posterior urethra it met an impassable obstruction, after which the field was inspected and by rotating the scope the operator found that a little elevation of the instrument at the vesical end made it possible to pass it into the bladder cavity. With a little manipulation the instrument was passed into the bladder and the study was completed. The margin of the sphincter was definitely thickened and crescent shaped.

Fig. 7 is the record of a man aged 45, complaining of frequent, urgent and painful urination. The study of the trigone and the vesical mucous membrane shows it to be quite normal. On withdrawing the scope into the posterior urethra, just after a complete circle of mucous membrane folds over the end of the instrument, there is a definite thickening of the mucous membrane. It is thrown into thick folds and there are a few small polypi present on the surface. At the base of the verumontanum there is another area, indicating a chronic inflammatory process.

Fig. 8. This is the study of a man aged 60, complaining of shreds in the urine, without any great inconvenience excepting the mental hazard. The Greenburg cystourethroscope demonstrates a number of small dilated ducts and acini in the fossa prostaticus with a definite hyperemia around their margins. Over the verumontanum, which was markedly broadened out, there was a polyp about the size of a split pea, which appeared firmly attached at this point. There were one or two small dilated ducts at this level of the prostatic urethra.

SUMMARY

Figures 3 and 4 represent the group of prostatic hypertrophy, figure 3 showing a definite cleft, while figure 4 shows nothing characteristic of prostatic hypertrophy with the Brown-Buerger cystoscope. With the Greenburg cystourethroscope, however, definite cleft formation can be demonstrated in each instance. This, of course, is due to the fact that the Greenburg cystourethroscope is adapted for a study of the entire prostatic urethra, while the Brown Buerger scope permits inspection of the extreme vesical end of the prostate only.

Figures 5 and 6 illustrate complications following operations for prostatic obstruction. In these instances the Greenburg studies again were superior to the Brown-Buerger studies, only because it permitted a study of the prostatic cavity. In the one instance (5) this is particularly true, while in the other instance (6), with the aid of the dilating fluid and inspection of the field, it was possible to pass the instrument into the bladder, which could not be done with the Brown Buerger scope.

Figures 7 and 8 are representatives of the chronic inflammatory group of posterior urethral conditions, one showing definite polypi formation and small infected ducts, the other polypi and localized inflammation, consequently demonstrating the urgent need of direc tinspection of this field in patients complaining of chronic posterior urethral conditions.

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PAGET'S DISEASE INVOLVING THE SKULL. REVIEW OF LITERATURE. REPORT OF THREE CASES *

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Osteitis deformans, or Paget's disease, was described by Paget as follows (quoted by Hempelmann[1]):

"It (osteitis deformans) begins in middle age or later, is very slow in progress, may continue for many years without influence on the general health, and may give no other troubles than those which are due to the change of shape, size and direction of the diseased bones. Even when the skull is largely thickened, and all its bones exceedingly altered in structure, the mind remains unaffected.

"The disease affects most frequently the long bones of the lower extremities and the skull, and is usually symmetrical. The bones enlarge and soften, and those bearing weight yield and become unnaturally curved and misshapen. The spine, whether by yielding to the weight of the overgrown skull or by change in its own structure, may sink and seem to shorten with greatly increased dorsal and lumbar curves; the pelvis may become wide; the necks of the femora may become nearly horizontal, but the limbs, however misshapen, remain strong and fit to support the trunk. In its earlier periods, and sometimes thruout all its course, the disease is attended with pains in the affected bones, pains widely various in severity and variously described as rheumatic, gouty or neuralgic, not especially nocturnal or periodical. It is not attended with fever; no characteristic condition of urine or feces have been found in it. It is not associated with syphilis or any other known constitutional disease unless it be cancer.

"In all cases I have seen the general appearance, postures and the movements of the patients have been so alike that these alone might suffice for the diagnosis of the disease. The most characteristic are the loss of height, indicated by the low position of the hands when the arms are hanging down, the low stooping with very round shoulders and the head far forward and with the chin raised, as if to clear the upper edge of the sternum, the chest sunken toward the pelvis, the abdomen pendulous, the curved limbs held apart and usually with one advanced in front of the other, and both knees slightly bent; the ankles overhung by the legs and the toes turned out. The enlarged cranium, square looking or bossed, may add distinctiveness to these characters, and they are completed in the slow and awkward gait of the patients and in the shallow costal breathing, compensated by wide movements of the diaphragm and abdominal wall, and in deep breathing by the uplifted shoulders."

Czerny, in 1873, described a chronic inflammation of the bones not unlike the condition found by Paget and gave to the disease the name osteitis deformans.

The involvement of the bones of the head has been noted by many authors. Carman and Garrick[2] report a case of a woman, age 37, who complained of aching in the legs, occasional sharp pains and paralysis of the left side of the face, of four years duration. Quivering of the left side of the face and pain behind the left ear were the first symptoms. Examination revealed a roughening of the long bones with enlargement of the skull. There was paralysis of the left seventh cranial nerve. Three other cases of Paget's disease of the skull are repored in the same paper. The symptoms were dizziness, headache, sleepiness, faulty hearing, earache and facial spasms. In one case the vessels of the scalp were very tortuous and sclerotic.

Da Costa[3], in discussing the frequency of involvement of the different bones, states that a characteristic feature of almost all cases is the enlargement of the skull. Occasionally the enlargement of the head is asymmetric. The face is seldom affected below the supraorbital margins, altho the jaws sometimes suffer. The head may become enormous, due to the immense thickening of the cranial bones. The greatest thickening is of the outer table, altho the inner table thickens to some degree. If there is great bony thickening of the face alone below the supraorbital margins, the condition is called leontiasis ossea. Such involvement of the face may cause severe pain and loss of function. In one case known to the author blindness resulted.

Deppe[4] quotes Marie as reporting a case in which zygomata and jaw bones were very much thickened and squeezed the healthy teeth out of the jaw.

Evans[5] reports a case of definite traumatic origin, beginning in the tibia and eight years later having involvement of the occipitoparietal region.

Hempelmann[1] reports a case in which the head measured 63¾ cm. in circumference and had been enlarging for ten to twelve years. The lower jaw enlarged so that the lower teeth articulated one-half inch in front of the upper, while formerly the upper teeth articulated in front of the lower (prog-

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* Read before Seattle Surgical Society, Seattle, Wash., Oct., 1923.

nathism). The left side of the lower jaw was rather more thickened than the right; the head rested almost on the sternum, which showed an exaggerated anterior curve. A second case, age 49, in which the x-ray revealed a thickening of the outer table of the skull, evidently a case of Paget's disease limited to the skull.

Jack[6] reports a case. Patient, male, aged 46, who complained of severe pains in the head with attacks of fever and weakness, and later blurred vision. A soreness was present at the apex of the cranial vault and then a soft area which seemed to contain fluid was noticed. It was surrounded by a sensation of pressure and tightness. Examination revealed soft, fluctuating area in vertex region, apparently an area of necrosis involving the skull. The x-ray revealed a spongy appearance of the compact layer, with increased transparency. The skull was greatly thickened and scattered thru were irregular spots which could be compared to tufts of cotton.

Jefferson[7] reports a case in which the zygomatic processes were very much bowed, especially on the right side, producing facial asymmetry. The lower jaw protruded forward.

Laube[8] reports the case of a 29 year old soldier with enlarged head and bowed tibia.

Mayer[9] reports a case. Male, aged 47 The x-ray findings showed the frontal sinus full; the region of the ethmoid bone cells and right half of the nose unusually light. The vault of the cranium was very thick, compact in some places and permeable in others. Enlargement of the skull was in marked contrast to the size of the face.

Moschcowitz[10] reports a case of a sixteen year old boy who at eight noticed a slight protuberance over the right parietal bone, and four years later a similar protrusion over the left cheek. Both of these protrusions increased in size very slowly and, with the exception of the deformity they gave rise to, they caused him no complaint.

Romer[11] reports a case involving the lower jaw, the etiology being traumatic.

Schlesinger[12] reports a case involving the lower part of the face, the facial bones, the teeth and the thyroid cartilage.

White[13], in reporting on Paget's disease in monkeys, states as follows: "In one case the maxillary bones were excessively thick, so that the monkey's mouth would not close. In another of the cases it is reported that, in addition to the curvatures and swelling of the skeleton, the head was enlarged, face deformed by swelling of the upper and lower alveolar process, jaws did not close, and the palatal bones were flattened, skull irregularly thickened, elastic but not soft, slight subperiosteal growth."

Diagnosis. The diagnosis of Paget's disease of the head is being made more frequently because of routine x-rays of the head. Many cases that previously had been diagnosed as mandibular arthritis, trifacial neuralgia, chronic ethmoiditis, and various neuralgias of the head are now being correctly diagnosed as Paget's disease, due to routine x-rays for suspected sinusitis as the cause. The use of the Bucky diaphragm as a routine procedure for head cases will sometimes cause a case of Paget's disease to be overlooked, due to the fact that the thinned outer table will not throw a sufficient shadow to be noted on the film.

Symptomatology. The history is of importance in the diagnosis, as the patient frequently calls attention to the fact that the first symptom noted was the enlargement of the head. In males they complain of having to buy hats larger and larger each season. Nodular exostoses, especially over the frontal and occipital regions, are frequently mentioned by the patient. The slow insidious onset is quite characteristic in the history of these cases.

It is not until one of the sensory nerves of the head has been encroached upon that the patient begins to complain of painful symptoms. This may be first in the region of the trifacial nerve, as in one of the cases reported in this series, or a pain in the region of the sphenoidal sinus, where the vidian nerve crosses backward, the so-called vidian neuralgia. Sometimes the impingement will involve the sensory nerves of the middle ear and associated with deafness will be more or less pain in the ear. The patient frequently notices a change in hearing and in vision, when the foramina of the auditory or optic nerves are involved.

The first symptom is often a sinusitis of the ethmoids and sphenoids. This occurs when the floor of the base of the skull is involved. Paralysis of the facial nerve is quite a common symptom, as reported by a number of observers. Several have noted the drooping of the shoulders when the spinal accessory is involved on one or both sides. The cuboidal shape of the head is quite characteristic, when the involvement is confined chiefly to the vertex, while other symptoms are not marked until the later stages of the disease.

The final stage of Paget's disease of the skull has as its symptomatology that of increased intracranial pressure. This may not occur until after the head has assumed an enormous size, but eventually the inner table becomes involved and a fibrosis on the inside occurs. This decreases the size of the cranial cavity and the picture of a brain tumor presents itself. The characteristic finding in these cases is choked disc, associated with other cranial nerve involvement. In one of my cases the patient showed a weakness of one side and the diagnosis was made of a brain tumor on the right side; air was injected into the ventricles and an x-ray taken. The diagnosis of Paget's disease was made at the time of the trephine for the purpose of reaching the lateral ventricle. The skull was fully three-fourths inch in thickness and as soft as cheese. The x-ray easily confirmed the diagnosis.

Etiology. Little is known of the etiology of this condition. Some authors give syphilis as a predisposing cause, while others believe a metabolic disturbance or a disturbance of the endocrine glands lies at the bottom as the causative factor.

The case of the little child (case 2) illustrates the early beginning of Paget's disease, while cases are reported as having developed as late as the seventh decade. That there must be some disturbance in the chemical reactions within the body tissues is accepted by all authors. Finney[14] believes that, while it is an awkward condition, it is not one that necessarily proves fatal and cites cases that have been under his observation for many years without very marked change. There may be an arrest of the development of the process automatically after the fibrous stage has been completed. This might account for some of the islands of calcification found in the newformed fibrous tissue. That this arrest may occur at any stage of the disease would seem possible.

Fatalities from Paget's disease, then, could be attributed to those cases in which the arrest of the fibrosis and the development of calcareous deposits does not take place. The deformities of the legs can easily be accounted for in the same way as that of the chest, due to mechanical forces. Undoubtedly the bearing of weight, while having a tendency to distort the bones, will also have a tendency to toughen them. This is not true in the bones of the skull which bear no appreciable weight. Here the fibrosis does not become arrested and we have a more gradual but persistent replacement of bone by fibrous tissue. Perhaps this would account for the fatal termination in cases where Paget's disease is confined to the bones of the head.

Phosphorus has been suggested by several authors for the treatment of this disease. Radium and x-ray have not been used to any great advantage.

Case 1. Referred by Dr. F. J. Clancy. Age 51, housewife. Admitted to the Columbus Sanitarium Oct. 22, 1922, with history of having had headaches, occipital, for five weeks. Pain had gradually increased until she became dull mentally and unable to express her feelings. The right face became drawn upward slightly while the left lost its expression (facial left). She had been falling backward of late and the left side was weaker than normal.

Neurologic examination by Dr. A. P. Calhoun was as follows: "Patient dull, mentally; unable to cooperate with examiner; positive neurologic findings; left facial paresis, weakness left arm and leg, absent abdominal reflexes, positive sustained ankle clonus right and left, positive Babinski right and left, choked discs right and left."

Laboratory findings: Dr. O. J. West. Wassermann blood negative; white, red cell counts normal; urine normal except trace of albumin; spinal fluid clear, negative Wassermann, bacteria negative, cell count 30.

To localize the tumor from the neurologic findings was impossible. The confusion of the patient, loss of memory, double choked discs, and facial nerve weakness suggested tumor in frontal right side; the falling of patient, weakness of left side, suggested posterior occipital or cerebellar tumor. It was so uncertain that a trephine for ventricular puncture and air injection was considered the proper procedure.

This was done on Oct. 26. When the drill was used the bone was found to be very soft, so much so, that comment was made that the case was possibly one of Paget's disease and yet examination on the table failed to show any other bony changes. The ventricle on the right side was punctured easily and air injected. X-rays then were taken and the characteristics of Paget's disease of the skull shown (fig. 1).

The patient died six weeks later but no autopsy was obtained. This case was one in which the condition of fibrous replacement of the bone evidently had occurred within the cranium (the inner table) until the cavity was so contracted that the symptoms of a brain tumor were present.

Case 2. Referred by Dr. J. B. Eagleson. Age 6. Examination of the fundus of the eye shows a perfectly normal fundus; the blood vessels are a little tortuous but not congested; the nerve is perfectly normal in color, no evidence of edema; pupils react normally; no nystagmus either to the right or left; the conjunctiva is white and the veins are not particularly distended; there is no pulsation over the temples, but the sutures are separated; the fontanelles have closed normally; the parietals are palpable from the frontal over the entire course; the occipitoparietals are not so easily palpable; the veins which drain the scalp are all palpable, apparently hardened, especially marked around the orbits.

Summary. A stasis of the venous blood which is drained by the facial veins to the nasal vein, ciliary veins, ophthalmic veins and the cavernous sinus; there is no evidence of intracranial pressure in the eyes, but there is a failure of closure of the sutures of the frontal bone. The x-ray shows thickened frontal and occipital bones to three times the normal. There is no thinning of the outer table as yet except in the posterior third of the frontal bone (fig. 2).

Diagnosis. Paget's disease of the skull, involving frontal and occipital bones.

Case 3. Female, age 68. Examined on Sept. 15.

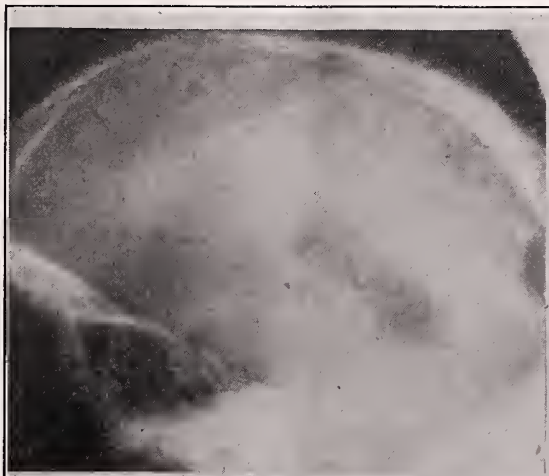

FIG. I

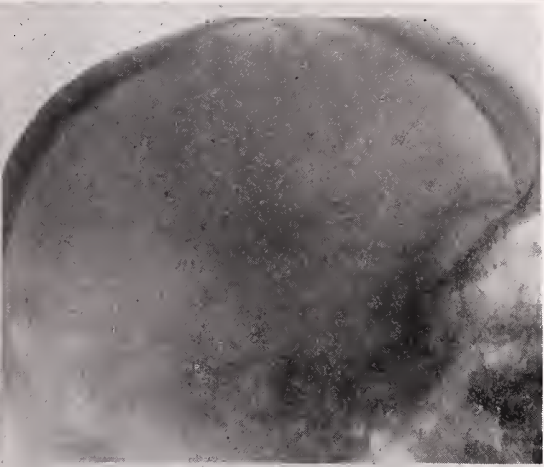

FIG. 2

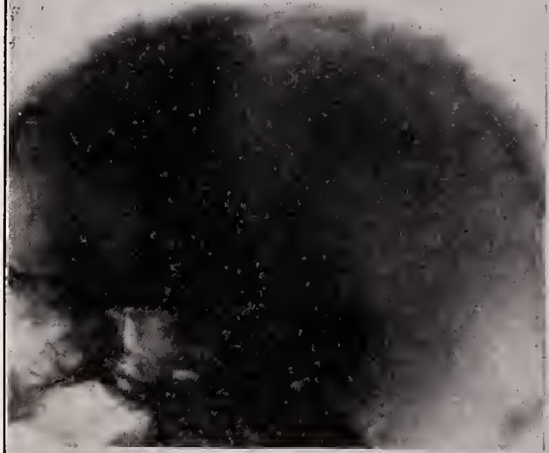

FIG. 3

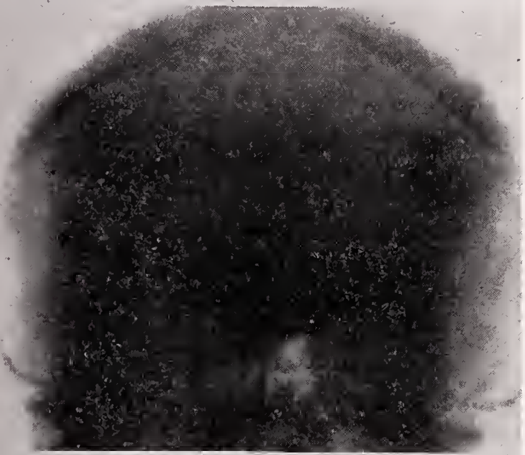

FIG. 4

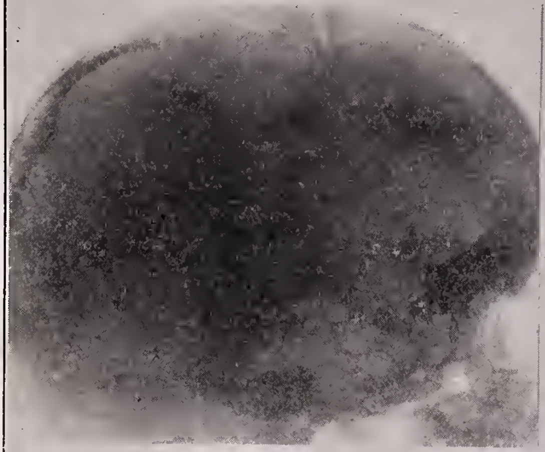

FIG. 5

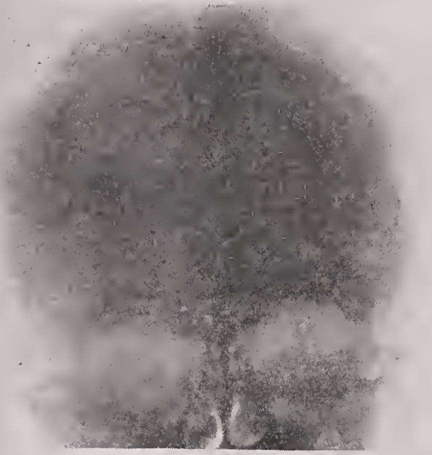

FIG. 6

Fig. 1. Case 1. Note (a) thickening of outer table of skull, (b) thickening of inner table of skull, (c) air in the ventricle.

Fig. 2. Case 2. Note thickening of outer table of the skull in the early Paget's disease.

Figs. 3 and 4. Case 3. Note the lateral and anterior views; (a) Moth-eaten appearance of the entire skull, (b) inner table still intact.

Figs. 5 and 6. Case 5. Note lateral and anteroposterior views of a case of hydrocephalus. (a) Lateral view shows thinning of skull, (b) anteroposterior view shows appearance of thickened skull, due to overlapping of bursa. This is shown also in the occipital portion of the lateral view.

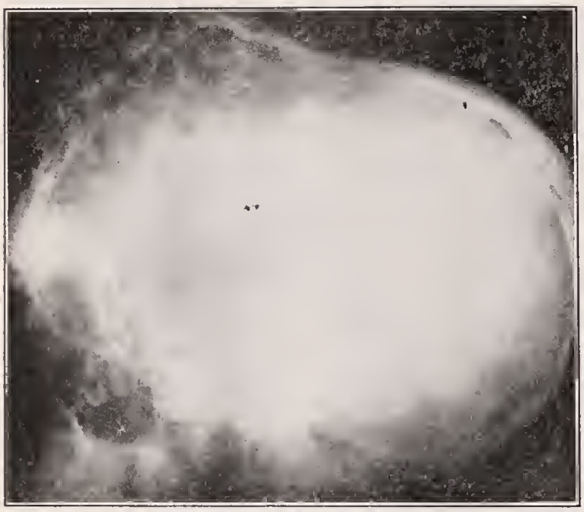

Fig. 7. Case 4. Note oxycephalic development, cystoid in character, of entire frontal bone.

1922. Patient had had a trifacial neuralgia of a severe type for one year, also had suffered from a discharge from the nose for about the same time. During the past three months she had been losing weight, due to the fact that she was unable to eat solid food. The act of chewing caused a sensation of pain in the face and a violent attack of neuralgia would ensue.

The examination revealed the typical facial expression of trifacial neuralgia, an expression of fear. She favored her right side in talking, so much so that the picture suggested a facial paralysis, altho she could move the muscles on the right side as well as the left.

Patient was admitted to the City Hospital. An examination of the nose by Dr. Blair revealed a mucopurulent discharge from the right maxillary sinus. Upon puncturing the nasal wall of the sinus and irrigating, no mucopus was found but the whole cavity seemed to be a cheese-like mass. The needle met with slight resistance, no matter where it was placed. The x-rays established a diagnosis of Paget's disease of the skull (figs. 3 and 4). The eyes did not show any edema of the disc.

The patient was kept for two weeks under sedatives but the pain was so terrific and the case so pitiable that it was decided to operate for a Gasserian ganglion. This was done and gave relief. Compression symptoms followed, however, and the patient died from a typical increased intracranial pressure.

No autopsy was permitted but from the operation on the Gasserian the following conclusions must be made. (1) The outer table was very soft and practically no bone salts had been redeposited in the new formed tissue. (2) The inner table likewise was soft and particularly in the basilar region, as the encroachment on the cranial cavity had been rather marked. (3) This is one of the most typical cases, the onset being a trifacial neuralgia which was attributed to a sinusitis.

It is commonly diagnosed as sinusitis and a needle inserted to irrigate the sinus or a turbinectomy performed to establish drainage, In taking the x-rays of the sinuses radiologists expose only the sinus region. This does not give the diagnosis, as the whole skull must show.

These three cases form a series quite typical of Paget's disease of the skull. The differential is shown by two cases, one a case of oxycephalia (case 4), in which the frontal bone has a cystoid development far in excess of any normal condition. This peculiar condition was found in a shipyard worker who had marked exophthalmos and very wide interpupillary distance. His case was one of true oxycephalic development, as shown by the x-rays (fig. 7.) These cases are sometimes diagnosed as Paget's disease. The second case (case 5) is that of a little child who now has epilepsy, who is ten years of age and totally blind in both eyes. His condition developed early in life and was diagnosed as Paget's disease from an anteroposterior x-ray. Even at this late date the anteroposterior plate would give this diagnosis, but a lateral view shows it to be one of true hydrocephalus (figs. 5 and 6).

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CEREBRAL THROMBOPHLEBITIS COMPLICATING FEMORAL THROMBOPHLEBITIS

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When one considers the frequency of the occurrence of thrombosis of the femoral and saphenous veins, as well as of those in the female pelvis, he is impressed with the rarity with which other parts of the circulatory system are involved, with the possible exception of the heart cavities themselves in cardiac decompensation. Thrombosis of the mesenteric veins is certainly also very rare in comparison. One would expect thrombosis to extend into the vena cava from the uterine veins or from the saphenous or femoral veins more frequently than it does.

It is rare to see a case that leads one to believe that thrombophlebitis may be metastatic in its behavior. Because of this rarity the following case is reported, altho it is unfortunate that a complete autopsy on this patient was not permitted, whereby it would have been possible to establish or disestablish relationship between the endocarditis present and the inflammation of the veins in the meninges.

B. M. G., female, age 41. Married 21 years. Husband living and well; two children, 20 and 17. No miscarriages.

Previous Illnesses: Measles, mumps, chickenpox and scarlet fever in early childhood. Articular rheumatism in 1913, recurred in 1915, when tonsils were removed. Knee joints were chief involvement. Amputation of cervix in 1915 for erosions. Menses: Always regular, 28-day type until 1920. At that time became increased in amount, culminating in July, 1921, in menorrhagia, lasting six days. Since then menorrhagia continues with offensive odor.

Present Illness: In July, 1922, before the patient came under our observation, she had a swelling of the left knee which had been diagnosed "rheumatism." No definite statement as to duration of this disorder could be obtained except that it recurred on Dec. 20. On Dec. 28 patient was seized with a severe pain in the right lower chest, associated with a temperature of 102° and pulse of 120. This was regarded as a pleurisy by her physician. She was up and about four days later, on Jan. 1, 1923. On Jan. 3 she had a similar pain in the left lower chest which continued for four days, shifting upward. Two days later (Jan. 5) she developed a pain in the left leg and thigh with some swelling of the leg and a fever of slight degree.

Physical Examination: Patient is a moderate sized woman, in some respiratory discomfort, with a sallow complexion and marked accentuation of the normal pigmentations. Temperature 100.4°, pulse 100, respiration 24. Head: Pupils are round, regular and react normally to light and accommodation. Buccal mucous membrane is very pale. Teeth show no important dental sepsis. Tonsils are removed. Neck: Cervical glands are not palpable; thyroid gland is normal. Chest: Is of normal contour, expansion is equal and adequate. Lungs: Auscultation reveals a friction rub in the left axillary space near the base of lung. No rales or dullness are elicited. Heart: Apex is in normal position and circumscribed. Heart dullness is not enlarged. First sound at apex is muffled and followed by a long blowing murmur, transmitted to the axilla, soft in character. All other tones normal; no accentuations of the aortic or pulmonic sounds. Abdomen: Is slightly distended; no organs are palpably enlarged. No masses palpated. There is some resistance in the suprapubic region, with tenderness of mild degree. Pelvic: (Examination by Dr. E. M. Welty). Large fibroid tumor on upper surface of uterus. (Probably degenerating.) Extremities: Left leg one-third larger than the right as a result of edema. Marked tenderness in calf and in popliteal space. Neurologic: Reflexes normal.

Jan. 11. Blood count: White blood cells, 10,000; red blood cells, 3,050,000; hemoglobin, 52 per cent; polymorphonuclear leucoytes, 76 per cent; small lymphocytes, 20 per cent; large lymphocytes, 4 per cent. Cells appear pale. No irregularity in size or shape, nor nucleated red cells observed.

Urinalysis: Specific gravity, 1018; reaction, acid; albumin, present; sugar, none. Microscopic examination reveals occasional hyaline casts, a few pus cells and an occasional red cell.

Blood chemistry: Nonprotein nitrogen, 28 mg. per 100 c.c.; urea nitrogen, 14.5 mg. per 100 c.c.; creatinine, 1.4 mg. per 100 c.c. Jan. 12. Blood culture shows no growth.

The progress of the thrombophlebitis was not marked by any unusual manifestations, continuing in the left leg alone until Jan. 21. There was a moderate fever varying from 99.2° to 101.2°. The pulse varied from 96 to 100, respirations from 20 to 24. At one time a large purple discoloration was noted on the calf, probably due to prolonged use of the icebag. Urinalysis showed persistence of albumin and hyaline casts. Pains in the chest were present at times but nothing was found on physical examination suggestive of pulmonary embolism.

On Jan. 21 pain and swelling made their appearance in the right leg, preceded for a day or two by vague "rheumatic" pains in the knee. There was no marked rise in temperature with this development. The patient complained thenceforth of severe pains in the leg, often demanding a sedative, and on one occasion vomited; she became very restless and emotional. Profuse vaginal discharge, sanguineous in character and offensive in odor, persisted, tho vaginal examination presented nothing new.

On Jan. 24 she complained of chilly sensations, which were frequently repeated, but at no time was there a definite rigor. On Feb. 1 there was a severe pain in the left forearm, lasting but an hour or two; no local changes could be found on examination. Exhaustion and failing appetite became manifest. There were no other changes except those of gradual improvement in the legs with disappearance of the edema. On Feb. 13 and 14 she complained of headache but had a normal temperature for the first time; two days later the nurse was dismissed and she sat up daily for an hour or two at a time.

On Feb. 19 patient was suddenly seized with a violent convulsion which was observed only by a domestic servant who could not describe its distribution or nature. A fundus examination revealed some distension of the veins; a lumbar puncture was suggested but declined. She improved steadily from then on. Records were discontinued and she was up and about seemingly convalescent and continued so for eighteen days.

On March 11, at 2:00 a. m., patient was suddenly seized with a severe convulsion observed by her husband, a physician, who described it as clonic in nature, beginning in the right side of the face and the right arm, lasting three minutes, during which time it became general, to be followed by a deep stupor from which patient never fully emerged. There was constant twitching of the right side of the face and arm which frequently became exaggerated to convulsive attacks. A spinal puncture several hours later revealed a spinal fluid without increased pressure or pathologic contents, either chemical or morphologic. Convulsions continued at intervals of one to two hours thruout the day, coma in the intervals.

A conference between Drs. George E. Price, E. M. Welty and the writer led to the most probable diagnosis of metastatic brain abscess. The temperature curve, the history of pulmonary embolism, and the sudden onset were considered quite conclusive evidence of the metastatic nature of the process. Localization of the abscess, on a basis of Jacksonian epileptic seizures of the right arm and right side of the face, was determined in the immediate subcortical region under the face and arm center of the left hemisphere.

Operation was advised but was not consented to until the next day, convulsions and coma having continued thruout. The operation was begun at midnight. Patient went into collapse after the skull flap had been turned down. The operation was therefore discontinued. Patient died an hour afterward.

NECROPSY REPORT

A partial autopsy was permitted, wherein the pelvic organs and veins were examined, the spleen palpated, brain removed and examined. Examination of the heart and lungs was forbidden.

The body was that of a moderately small sized woman. The skin pigmentations were considerably accentuated with a diffuse, sallow coloring everywhere. There were no external marks of importance. The legs were about equal in size at the time of necropsy.

The uterus showed a large subperitoneal fibroid about 10 cm. in diameter on the upper, somewhat anterior, left surface. Cross section showed the usual picture of a fibromyoma with predominance of fibrous tissues. No degeneration had taken place. The mucous membrane of the uterus was somewhat thickened and covered with a grayish secretion of considerable quantity. The cervix had been amputated. No abnormalities were discovered by palpation of the various organs in the abdomen (removal not being permitted).

The skull and its coverings showed nothing noteworthy except a recent operative wound. The brain on removal in the usual manner showed an extensive hyperemia in the area of the left Rolandic fissure, near the lower end. The larger veins were thickened; hard thrombotic involvement extended four centimeters along one vein, and three collaterals showed involvement of one and one-half centimeters in length. Another vein was thrombosed thru a distance of three centimeters, and another branch about a half centimeter. Many very fine veins surrounding these were thrombosed.

On section of the brain the cortex and a very small superficial portion of the white matter showed intense hemorrhagic infiltration with petechial hemorrhages. The area involved is about three centimeters in width anteroposteriorly and three and one-half centimeters in length from the base of the brain upward toward the longitudinal fissure. In addition to petechial hemorrhages there was some edemo of the brain and the pia arachnoid were more adherent than usual.

Microscopic examination of the speciment submitted to Dr. R. F. E. Stier showed thrombosis of veins with entire freedom from disease in the arteries. The brain tissue showed slight hemorrhagic infiltration surrounding the thromboses. The walls of the vessels involved showed definite inflammatory infiltration of the various layers, but particularly of the outer layers of the vein.

SYNOPSIS

We have under consideration a patient with a rheumatic history and an endocarditis which may or may not have been active, laboratory evidence in the form of negative blood culture indicating a healed endocarditis. This patient had had two attacks of pleurisy, one in the right lung, the other in the left, following a painful swelling of the leg. These must be interpreted as pulmonary emboli, having their origin in a thrombophlebitis in the femoral or saphenous veins. Gradually the infectious process in one leg resolved, only to spread to the opposite leg during the three weeks of observation. The following five weeks were characterized by a moderate temperature with occasional pains in the chest, occasional pains in the legs, culminating in what appeared to be a fairly complete recovery Feb. 16, nearly two months after the onset of the first thrombophlebitis. However, three days later the patient was seized with a sudden severe convulsion which was observed and described only by a domestic servant. A spinal puncture was suggested but declined by the family. The fundus examination showed some distension of the veins. Four days later the patient was up and about again, apparently quite normal.

Two and a half weeks later there was a recurrence of the convulsions, then observed by her husband, who is a physician, and described as typically Jacksonian in type, beginning in the right arm and right side of the face, lasting about three minutes and followed by profound stupor. Convulsions recurring every one to three hours were of the same character, beginning with twitching of the right side of the face and arm. In the interim there were frequently lesser convulsive seizures, limited entirely to the right side of the face and arm. A spinal puncture was made ten hours after the second convulsion group but the fluid was found to be entirely normal, altho under slightly increased pressure. Thereupon convulsions continued thruout that day and the following. Forty-eight hours after the second convulsion consent was obtained for operation, on the basis of a diagnosis of brain abscess. The patient went into collapse after the skull flap had been turned down, so operation was discontinued.

DISCUSSION

Thrombosis of the cerebral veins may be divided into two types: (a) marantic, (b) septic. So-called marantic thrombosis occurs especially in infancy and in senility, and also as a result of chronic exhaustive illness. It is assumed that it is due to clotting of the blood within the veins or sinuses, favored by sluggish circulation and changes in the constituents of the blood. An interesting group of this type is formed by those cases associated with chlorosis. A fairly complete report of this type was made by Salla[1] i n1913. Septic or infectious thrombophlebitis of the cerebral veins may occur as complications in any acute or infectious disease, such as pneumonia, influenza, or endocarditis, but also following infections during the puerperium. So far as our search of the literature goes there have been no cases reported in which cerebral thrombophlebitis could be considered part of multiple thrombophlebitis.

Fisher[2] reports four cases of primary thrombosis of the cerebral veins and sinuses in children. These cases perhaps do not exactly belong here, in view of the fact that the thrombosis was primary in the cerebral veins. There is nothing, however, to prove that the thrombosis in our case was metastatic. It might have been part of a multiple thrombophlebitis primary in nature or present before the thrombophlebitis in the legs. In three of his four cases microorganisms were isolated from the venous blood stream. In one of these, a child suffering from summer diarrhea, it was found that microorganisms were identical with those found in the intestines, suggesting that the child had bacteremia from the gastrointestinal tract. He cites an additional case in which a child fell into a puddle of muddy water, some of which he swallowed. Subsequently he developed a cerebral thrombosis which the author assumes may have been due to the organisms swallowed at the time the dirty water was ingested.

Taylor[3], in discussing thrombosis of the cerebral veins and sinuses, mentions the possibility of an infectious thrombosis, secondary to infections other than in the middle ear, as having their origin in nasal infections, infected tonsils, erysipelas of the face or orbit, anthrax of the face and infected compound fractures. No mention is made of any instances secondary to distant infections or to multiple venous thrombosis.

Hunt[4] reports a case of thrombosis of the cerebral veins and sinuses without other evidence of septic infection. Twenty days after delivery patient developed a severe headache, followed within twelve hours by general convulsions, lasting from three to five hours and recurring every two or three hours, beginning with clonic and terminating with tonic spasms. Consciousness was lost in the more severe seizures. This continued two days, then patient was free from convulsions for an interval of five days, altho there was vomiting and severe headache during the interim. Then patient became irrational and restraint was necessary. The right side of the face and the right arm then became paralyzed. Convulsions became Jacksonian in type, with conjugate deviations of the head and eyes to the left. Two days later, ten days after the onset of the convulsions, patient died of cardiac weakness and pulmonary edema. Necropsy revealed cerebral thrombophlebitis. This is the only case found in the literature which at all resembles ours.

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PRACTICAL VALUE OF FUNCTIONAL TESTS FOR KIDNEY EFFICIENCY IN THE DIAGNOSIS, PROGNOSIS AND TREATMENT OF NEPHRITIS

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It is many years now since the attention of the medical profession was first diverted from the pathologic anatomy of the kidney to an interest in the functional activity of the organ in Bright's disease. The early work of Widal and Javal on the relation of chloride retention to edema in nephritis was important, and the distinction which they drew between two types of nephritis, one associated with chloride retention, the other with azotemia or urea retention, was a distinct advance. Shortly after these authors had published their communications, the experiments of Shlayer and Hedinger stimulated much research upon impairment of renal function in disease, and since that time an extraordinary amount of work has been done upon this subject. It would take too long to describe in detail all the important advances that have been made along this line, and I must, therefore, confine myself to a discussion of some of the more practical results that have come from the investigations of renal function in disease.

One essential point must be kept clearly in mind when attempting to draw practical conclusions from

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these researches, namely, that nephritis, in most instances, is a very complicated disease, attended by changes not only in the kidneys but probably in other organs and tissues.. The disease cannot be regarded in most cases as a mere mechanical injury to the secreting structures of the kidney. It is far more complicated than this. Perhaps it would be nearer correct to regard it as a general disease, in which the kidneys suffer a conspicuous and obvious damage.

Some of these tests for kidney function, such as the excretion of phenolsulphonephthalein, probably measure directly the activity of one or another function of the kidney itself. Others, such as the determination of the excretion and retention of chlorides, water and nitrogenous substances, may in part be influenced by the metabolic processes in the cells and tissues and are not always a direct measure of renal activity. The significance or insignificance of these changes is not altered by the fact that many of them are measurable by exact chemical methods. They are the result of disturbed function, and are not necessarily indicative of specific anatomic lesions. But the utilization of these tests in an attempt to diagnosticate the early stages of chronic nephritis, to aid in the prognosis in both acute and chronic forms, and to assist in formulating a rational therapy have proved very useful.

The methods that have been developed to estimate the functional activity of the kidney depend essentially upon four types of technical procedure.

(1). The determination of the rate of excretion in the urine of certain known chemical substances which are injected beneath the skin or taken by mouth. The substances that have been most widely employed are phenolsulphonephthalein, lactose and potassium iodide. The use of potassium iodide and lactose has now largely been abandoned. The phenolsulphonephthalein test of Rowntree and Gerathy is very widely used, perfectly familiar and very useful.

(2). The determination of the specific gravity of the urine together with the sodium chloride and nitrogen content in specimens collected at two-hour intervals during the day with the patient on a special diet. At night one ten-hour specimen is collected and analyzed. A comparison of the day with the night amount is of value.

(3). The determination of the changes in the amount of normal metabolic products and salts in the blood, including uric acid, urea, nonprotein nitrogen, creatinine, glucose, chlorides, inorganic phosphates and sulphates. Since these chemical substances are normally excreted by the kidneys, very extensive investigations have been made by many workers to determine in what way an injury to the kidney may affect their excretion, and how soon this will result in an accumulation of these substances in the blood. The recent work of Denis indicates that the sulphates accumulate very rapidly in the blood, when there is the slightest damage to the function of the kidney, and may be found in highly abnormal quantities when all the other constituents are normal. Meyer has emphasized the fact that uric acid is not excreted with great ease and of the nitrogenous products may be the first to accumulate in the blood with damage to the kidney. Urea and nonprotein nitrogen are somewhat more readily excreted than uric acid and, finally, creatinine being readily excreted, is the last of these substances to rise in the blood in known cases of renal damage. The phosphates, according to the recent studies of Benedict, combine with the ammonia formed by the kidney itself and are then excreted. When this function of the kidney is impaired or much reduced, the phosphates are not completely eliminated and they accumulate in the blood, thereby lowering the alkali reserve. When this is marked a condition of acidosis supervenes. The concentration of chlorides in the blood is affected by so many factors and the significance of alterations in the concentration of the salt is at the present time so imperfectly understood that the chemical analysis of this constituent cannot be used to practical advantage.

(4). The determination of the ratio between the concentration of such metabolic products as urea in the blood and the rate of its excretion in the urine.

Of the four types of tests, the ones that have been most widely used, the ones with which we have had the longest experience and the ones that, in general, have given the most reliable results are, first, an estimation of the phthalein excretion; second, the renal test meal; and, third, the determination of the concentration of the chemical constituents of the blood. Of these the most important are urea, nonportein nitrogen, uric acid, creatinine and the CO_2 combining power of the blood, which, excluding other causes for acidosis, gives an indirect measure of the phosphates. The experience with these tests has been so extensive that we are now in a fair position to draw some conclusions regarding their value and their limitations. Above all it must be understood that their true significance can be correctly appreciated only when these tests are considered in combination with the clinical picture. Such determination alone may mean anything or nothing but, regarded as a part of a disease process, they often contribute important information.

As is well known, the normal function of the kidney may be profoundly disturbed in other conditions than nephritis. One of the commonest of these is the chronic passive congestion that comes with cardiac failure. The oliguria, albuminuria, cylindruria and even hematuria of chronic passive congestion are very familiar to all of us. Under these conditions it has been found, both experimentally and clinically, that the excretion of phthalein may be much diminished and that the nonprotein nitrogen or urea of the blood may be somewhat elevated above normal. At the same time the specific gravity in the two-hour test may be fixed at a high level and the excretion of chlorides, as is well known, may be diminished. With the restitution of the circulation, the congestion is relieved and the renal function in uncomplicated cases returns to normal.

Again, in a disease of quite a different nature, namely pernicious anemia, the kidney function, as measured by the concentration test, may be definitely impaired. On the other hand, the acute infections, which at one time were supposed to cause considerable renal damage on account of the frequent occurrence of albumin and casts in the urine, do not seem to be accompanied with any regularity by a derangement of function as measured by these tests. (Frothingham Arch.) There is, however, one possible exception. In pneumonia, both in the acute stage and during convalescence, several observers have noted an increase of nonprotein nitrogen and urea in the blood, combined with a decrease in the excretion of phthalein. (Tileston and Comfort; Schwartz and McGill, *Arch. Int. Med.* 1916, XVII, 42.)

In certain types of intoxication, on the other hand, the most profound changes may occur, and at times are so pronounced as to simulate the conditions often encountered in uremia. I refer here to the interesting alterations that have been observed to accompany acute intestinal obstruction that have followed experimental proteose intoxications in dogs and that may occasionally be met with in other obscure forms of intoxication. In the human being Tileston and Comfort were the first to note an increase in nonprotein nitrogen and urea during the course of an intestinal obstruction. Since then a number of observers have confirmed and extended this observation, one of the earliest series of cases having been reported by Luria, from the Presbyterian Hospital in New York. Indeed, the condition is now so familiar that it has become of some diagnostic significance to find a constantly rising blood urea or nonprotein nitrogen in a patient suspected of having an acute intestinal obstruction.

In other forms of intoxications, accompanied by gastrointestinal symptoms combined with skin eruptions, or in obscure intoxications following blood transfusions, the same extraordinary changes may at times be encountered.

But enough has been said to illustrate the fact that in conditions other than nephritis, as we understand it, these tests show marked deviations from the normal. At the present time the explanation for these abnormalities is not always clear. Some are undoubtedly due to temporary disturbances in the function of the kidney itself. Others may be dependent upon an upset in the metabolic equilibrium of the tissues or cells, which resembles very closely the condition observed in some forms of true nephritis.

And now we may do well to inquire into the actual conditions that are seen in nephritis itself. In the acute forms of nephritis and nephrosis, as some of the cases of Bright's disease have been termed, the tests are not needed for diagnosis. The character of the disease is so striking that the diagnosis is always made upon the clinical features, and from the examinations of the urine. Indeed, it is very striking that in one group with anasarca, low blood pressure and marked albuminuria, all tests for renal function may be normal, save for the oliguria and marked retention of chlorides. Even when these cases run a subacute or chronic course, the excretion of phthalein and the blood chemistry may remain within normal limits. It is in cases such as these that Epstein has described a low protein content of the serum with a relative increase of globulins, and definite increase in lipoids. To combat this abnormality high protein diets have been advised, but occasionally with such diets an increase in the nonprotein nitrogen and urea of the blood has been observed, which falls again to normal when the protein in the food is reduced.

In another type of acute nephritis, however, there may be notable and rapid changes, particularly in the blood chemistry. In such instances the acute onset may or may not be attended with edema, but is with considerable regularity associated with an increase in blood pressure, albuminuria and hematuria. Such instances have been termed by Vohhard and Fahr acute glomerular nephritis. When the disease is accompanied by edema, which is often the case, this is considered by Vohhard and Fahr to indicate that the typical acute glomerular nephritis and the nephrotic process are combined.

A study of the renal functional tests in these cases of acute hypertensive nephritis may be of distinct value for prognosis. In the early stages of the disease the blood pressure is elevated, the uric acid, urea and nonprotein nitrogen of the blood may rise to highly abnormal values, and in severe cases even the acid phosphates may increase and cause varying degrees of acidosis, while the urine may show fixation of specific gravity at a high level. In spite of many of these abnormalities it is often surprising to find that phenolsulphonesphthalein is excreted in perfectly normal quantities. This fact has repeatedly received special mention in the recent literature. In favorable cases all of these abnormalities may be of temporary duration, and within two to three weeks, or even in less time, the picture may return to normal. The following case will illustrate this form of the disease.

A man aged 47 was admitted to the Johns Hopkins Hospital on Jan. 26, 1923, complaining of shortness of breath for eleven days with swelling of the extremities and fulness of the epigastrium for two days. Both the family history and past history were unimportant except for the fact that he had recently had sore throat. He had never had a similar illness and denied syphilis. His acute illness had come on shortly after tonsillectomy with dyspnea, pain in the back, sudden swelling of the face, hands and feet, with a gain of weight of eighteen pounds in two days. He had noticed that his urine was scanty.

On examination he was found to have anasarca, fine rales at the bases of his lungs, a normal heart with blood pressure of 180-115. The margins of the optic disc were hazy. The urine was dark, smoky, sp. gr. 1028, acid; there was considerable albumin and microscopically red blood cells, white blood cells and casts. The phthalein excretion was 55 per cent in two hours. The blood chemistry showed uric acid 5.4 mg. per 100 c.c., nonprotein nitrogen 85.8 mg. per 100 c.c. and creatinine 1.69 mg. per 100 c.c.

Within a few days he improved rapidly. The dyspnea and edema disappeared, there was marked diuresis with elimination of large quantities of chlorides and by Feb. 10, fifteen days after admission, he had lost thirty-five pounds in weight (170-135). The blood pressure had fallen to normal, 135-85. The phthalein remained normal, 53 per cent in two hours, and the nonprotein nitrogen of the blood had fallen to normal, 29.1 mg. per 100 c.c. The urine continued to show some albumin, a few red and white cells and casts.

In spite of the persistence of albumin, casts and red blood cells, experience with similar cases led to the belief that the prognosis was good. This was borne out by subsequent events, for at the present time the patient is well and the urine for some time has been normal. As to whether recovery will be permanent cannot at the present time be told. We have few accurate data, collected over long periods of time, upon such cases, and it will be important to know whether these patients are especially prone in later life to hypertension or the slowly progressing forms of chronic nephritis. At present there is no evidence to show that this is so.

In still another group of cases suffering from acute nephritis the disease may run a somewhat different course. The onset may be sudden, with edema, oliguria, albuminuria and cylindruria, but there is no increase in blood pressure. During the edematous stage, the function of the kidney, as measured by the special tests, may seem quite undisturbed, for the phthalein excretion may be absolutely normal, and there may be no increase in the amounts of uric acid, urea or nonprotein nitrogen of the blood. On rest in bed improvement may take place rapidly. Diuresis starts quite promptly. The edema disappears, the albuminuria decreases but, while symptomatic convalescence is seemingly being established, the more precise examinations may show for the first time alterations that have been ascribed to the results of renal damage. The phthalein output diminishes, the blood urea and nonprotein nitrogen increases above the normal and the blood pressure may show some elevation. These disturbances coming late in the disease may be ascribed in part, at least, to an impairment of renal function, appearing almost as a residual phenomenon. They persist for varying periods of time and then disappear as the renal function actually returns to normal. Eventually recovery may be complete except for a slight albuminuria, and all methods of examination will fail to show any trace of disease.

These functional tests are also of value in giving us information concerning the progress from an acute, thru a subacute stage of the disease, to a chronic phase that may soon terminate fatally. The following case is an example:

A boy aged 17 was admitted to the Johns Hopkins Hospital on March 31, 1922, complaining of swelling of the body. The family history was unimportant. At the age of six he had had diphtheria, but had otherwise been well. On Jan. 12 he had thought he had caught a cold and two days after noticed swelling of the body with pain in the right flank. The swelling of the body had continued and the abdomen had become enlarged.

On examination he was sallow and pale, there was anasarca. The fundi were normal. The lungs were clear and there was no enlargement of the heart. The Hb. was 65 per cent; r.b.c., 4,232,000; w.b.c., 10,680, with normal differential count. The blood pressure was 118-72. Weight 145 pounds. The urine was dark, contained much albumin, and microscopically many red blood cells and white blood cells and casts. A few days after admission the phthalein excretion was 0, the nonprotein nitrogen of the blood 66.8 mg. per 100 c.c., the creatinine 2.28 mg. and the blood CO_2 22.3 vols. per cent.

The general condition of the boy, together with the results of the examinations, suggested to those who saw him that the nephritis was proceeding to a subacute stage with marked impairment of renal function. A month later he showed signs of drowsiness, the edema and oliguria persisted, the anemia had increased, the blood pressure was 130-80, the phthalein excretion was still 0, the nonprotein nitrogen in the blood had risen to 95.3 mg., the creatinine to 3.33 mg. per 100 c.c. The acidosis persisted, and the specific gravity of the urine was fixed at a high level 1020-1022.

Later in July, six months after the onset of his illness, he appeared symptomatically better, the edema disappeared entirely, his weight fell to 105, he felt quite well and was up and about and active. The anemia persisted, however, the blood pressure was 130-85 and a few hemorrhages appeared in both fundi. In spite of this symptomatic improvement the evidences of impaired renal function continued to increase. The nonprotein nitrogen of the blood was 154.6 mg. per 100 c.c. and the creatinine had increased to 12.19 mg. per 100 c.c.

In August, even tho he was up and about, feeling quite well and doing some work, the evidences of marked impairment of renal function persisted or even increased. On Aug. 14 the inorganic phosphates were 9.3 mg. per 100 c.c.

He continued to improve symptomatically until Oct. 1, 1922, when he suddenly began to vomit. He was readmitted to the hospital on Oct. 3. He was very ill, extremely pale, the Hb. being 38 per cent; r.b.c. 1,816,000; w.b.c. 6,840. There were hemorrhages in the eye grounds, but no enlargement of the heart and no edema. The blood pressure was 120-80. The nonprotein nitrogen had risen to 240 mg.; the creatinine to 14.4 mg.; the blood CO_2 was 26 vols. per cent., and the phthalein 0. It seemed obvious that the boy was on the verge of uremic coma. He became rapidly worse, went into coma on Oct. 22 and died on Oct. 25. On Oct. 19 the nonprotein nitrogen of the blood was 357.00 mg. per 100 c.c.; the creatinine 21.4 mg. and the blood CO_2 28.2 vols. per cent.

Altho this case is rather an extreme example, it illustrates the fact that the function of the kidney may diminish almost to a point incompatible with life, without the presence of definite warning symptoms other than those obtained from functional tests.

In the acute forms of nephritis, therefore, one obtains very variable results with the employment of these different methods of examination. There are constant changes. The disease may run a rapid course, often fortunately to complete recovery, and the chemistry of the body fluids as well as the secretory activity of the kidney may change as rapidly and as frequently as do the more obvious physical signs and the symptoms of the disease. The more elaborate chemical examinations and functional tests may be employed to advantage in forming some opinion about prognosis, but I have received the impression that the phthalein test is one of the most reliable in affording evidence, in the acute disease, of severe and progressive injury to the kidney. In most acute cases the phthalein excretion is normal or only slightly affected. But when it is much reduced and when the elimination of the dye progressively diminishes, the prognosis is likely to be serious, and recovery is protracted or the disease becomes subacute.

Undoubtedly one of the most useful purposes to which these tests may be put is to detect the early changes in the secretory activities of the kidney in progressive chronic nephritis. This type of nephritis is so frequently combined with hypertension in adult life and in advancing age, that it requires great refinement of clinical methods to distinguish between the types of essential hypertension, in which there is no significant involvement of the kidney, and the types of hypertension combined with chronic and progressive nephritis. In the first group the greatest danger to life lies either in failure of an hypertrophied and dilated heart or in rupture of a cerebral blood vessel; in the second group the gradually decreasing function of the kidney may end in uremic coma.

The development of methods both to detect the earliest changes in renal function and to measure their progress or control by treatment in this form of nephritis is an important contribution. One of the most satisfactory of these tests at our disposal to detect the early stages of chronic nephritis is the determination of the ability of the kidney to concentrate the salts and waste products which it excretes. The renal test meal serves most simply and efficiently to do this. It cannot, of course, be used in the presence of edema. In the early stages of this form of chronic nephritis, under the condition of the test, the urine assumes a character quite different from the normal. The two-hourly specimens no longer show the variations in amounts and in specific gravity that characterize the normal flow, and the quantity of urine passed at night tends to equal and even to exceed that voided during the daytime.

This tendency to excrete, in fixed concentration, both salts and waste products is first detected in the uniform elimination of the chlorides and later in the uniform elimination of nitrogen. Finally, in the advanced stages of the disease the kidney loses its power to concentrate the solids of the urine and excretes both day and night a fluid almost uniform in concentration of chlorides and of nitrogen. Even reduced to its simplest form this test may furnish information of considerable practical value. The patient is given a standard diet, containing salt. with the heavy meal at midday; the total fluid intake is limited to 1500 c.c. and is taken only with the meals; the estimation of the amount and specific gravity of the two-hour specimens of urine voided during the day and a comparison of the total day and night specimens will then give quite reliable and useful results.

The phthalein test in many instances comes next in delicacy. Even in the early stages of this form of nephritis a reduction from normal to 30 per cent or 40 per cent excretion of the dye in two hours is not infrequently encountered, and with the progress of the disease the decreased elimination becomes more marked. An increase in the nonprotein nitrogen of the blood, on the other hand, does not become evident in many instances until the disease is quite far advanced, and, therefore, is of limited value in early diagnosis. In the future a further development of some of the methods to determine the rate of urea excretion may be made applicable for early diagnosis. It has been suggested, particularly by Myer and by Baumann and his associates, that an elevation of the uric acid of the blood occurs early in this type of nephritis and they emphasize the possible diagnostic value of such findings. Later studies have shown, however, that the blood uric acid may be increased somewhat in a variety of diseases and is so readily influenced by purin metabolism that a moderate increase of this substance in the blood is not in itself of special significance. The recent work of Denis on the elimination of sulphates promises to furnish a method by which one might detect even a slight but permanent impairment in the secretory activity of the kidney, but at present our knowledge of the conditions under which the sulphates accumulate in the blood is very limited.

A repetition from time to time of the tests to determine the ability of the kidney to concentrate, of the phthalein test, and of estimations of urea, of nonprotein nitrogen, and of creatinine in the blood, give valuable information concerning the progress of the chronic nephritis. The prognostic significance of high values for blood urea, nonprotein nitrogen, and creatinine is now fairly well established. A moderate elevation of blood urea or of nonprotein nitrogen up to 40-60 mg. per 100 c.c. of blood may occur early and persist unchanged in patients who live for months or years. On the other hand, occasional patients with progressive chronic nephritis who are under treatment may show practically normal blood nitrogen figures to within a few weeks of their death in uremic coma. This may occur in face of the fact that all the symptoms and signs indicate clearly that the patient is growing rapidly and progressively worse. An increase of inorganic phosphates in the blood and acidosis in nephritis are usually seen only in an advanced stage of the disease.

In general, it has been found that increasing figures for the nonprotein nitrogen, urea, creatinine, and phosphates of the blood are of grave import and the patient suffering with chronic nephritis who presents this picture is dangerously near uremia.

In conclusion, it may be said that no one of these tests, or indeed scarcely any combination of them, is alone indicative of nephritis as we now understand the disease. In the acute and subacute forms of the disease they need rarely be employed for diagnosis. For prognosis, however, as an indication for treatment, and to measure the degree of recovery, the phthalein excretion and blood chemistry may be used to good advantage in acute nephritis. In the chronic form of the disease the test devised to measure the power of the kidney to concentrate chlorides and nitrogen, and the phthalein test are of real value in accurate and early diagnosis. A study of the blood chemistry furnishes a method which sometimes gives further assistance in diagnosis, but is of much more value for prognosis and the control of therapy. In the later stages of the disease, when uremia is pending or when the patient is in coma, a study of the blood chemistry is one of the most important adjuvants at our disposal in differentiating uremia of nephritic origin from other forms of convulsive seizures and coma with which it is so often confused.

The Use of Convalescent Serum in the Prophylaxis of Measles. In 396 cases of measles at the Durand Hospital during ten years there were eighteen deaths, or a rate of 4.5 per cent. Bronchopneumonia was the fatal complication in sixteen of these and associated diphtheria in the other two. There was only one death among children over 5 years of age, this occurring in a boy, aged 7 years, who had a complicating neglected diphtheria. During the spring and summer of 1923, measles convalescent serum was collected for trial as a prophylactic measure. Exposed children who had not had measles were given serum. In all, sixty-three children were observed by George H. Weaver and T. T. Crooks, Chicago (Journal A.M.A., Jan. 19, 1924). Of these, four had had measles and two were under 2 months old; these were not given serum and did not develop measles. There were fifty-seven susceptible children; nine of these were not given serum, and they all developed measles from twelve to fifteen days after exposure. Forty-eight were given serum; forty-four did not develop measles, altho they were kept with the others and were similarly exposed.

FUNCTIONAL TESTS OF THE KIDNEY *

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There is probably no organ in the body which has received such close attention and about which so much has been written as the kidney. The excretory function has been studied and much has been learned, while the true chemical action is yet to be determined. We have a number of functional tests, useful in estimating the damage which has occurred in the kidney, giving a picture, as it were, of the diseased kidney gained in no other way. With the advent of simplified microchemical methods of determining retention products of metabolism in the blood, we have been enabled to study the kidney from a new angle and check up our older functional tests.

In considering an organ it is important in so far as possible to understand the physiology and determine the normal functional range before considering variations from the normal. The normal kidney has several important duties to perform, probably the most important of which is the excretion of water. In addition it must filter out the waste products of nitrogenous metabolism, remove acid products from the body, maintain a balance of salt and excrete toxic substances taken up by the blood stream.

The kidney has several important chemical functions, one of which is the regulation of the reacting of the urine. From a constant slightly alkaline blood plasma a urine is formed, which at one time may be alkaline and in the next hour acid. No theory of renal secretion as a whole will fit into our laboratory findings. However, much light has been thrown on the subject by the physiologic chemist in the past year or two and we must accept in part the work of Cushny as given in his monograph on "The Secretion of the Urine."

Cushny believes that the kidney acts as a filter, separating the liquid portion of the blood, and carrying with it to the tubules the soluble products in the same percentage as are found in the blood stream. As the filtrate passes down the tubules water is reabsorbed, together with substances of which the body may make further use, such as sodium chloride. It is estimated that water is reabsorbed seventy times, sodium chloride some forty times, while urea, being a waste product of nitrogenous metabolism, is not reabsorbed.

We have many facts in favor of the secretive action of the glomerular epithelium, water being permitted to filter thru, but substances as sugar and sodium chloride are not permitted to pass thru, until their concentration in the blood reaches a certain percentage. To such substances, the term "threshold bodies" has been applied. Substances, such as urea, ammonium and creatinine are termed "the nonthreshold bodies," elimination occurring whenever they are present in the blood stream. Probably no single theory of renal secretion will hold when dealing with a normal kidney and less so when dealing with an organ altered by disease.

The kidney, like all other organs, is liable to be affected with acute and chronic diseases. In the acute kidney we have an organ which is swollen, with all the secreting cells more or less out of action. Water is retained in the body with little or no excretion of sodium chloride, acids or urea. In favorable cases the renal cells gradually recover, leaving but a slight trace of a damaged organ; no true determination of the change occurring in the kidney can be made in an acute process or at the time of an acute exacerbation of a chronic disease.

The clinician in the past has wasted much time in an endeavor to classify or fit his cases of nephritis into pathologic groupings. It is very difficult to correlate postmortem histologic findings with symptoms and observations made during life. From a clinical standpoint it is probably much better to consider the chronic, diseased kidney from the point of view of renal function, placing those cases with edema and no retention of nitrogeneous products in one group, which is classified pathologically as parenchymatous nephritis. These cases always show one important symptom, edema, which at times may be marked. The urine, as a rule, contains a large quantity of albumin and a variable number of casts, mainly of the epithelial and hyaline types.

In this type of chronic nephritis we have no appreciable retention of nitrogeneous products. In nephritis with edema the kidney seems to be defective in the power to eliminate sodium chloride. With the retention of salt by the body, the tissues rapidly take up water and continue to do so until a balance is struck, establishing the normal percentage of sodium chloride in the blood and body fluids. In this form of the disease it is quite obvious that functional tests can be of but little value; in fact, they are quite misleading, for renal function seems to be fairly normal.

You have all attended patients, in whom the tis-

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sues were loaded with water, and seen them under appropriate treatment lose their edema and go about their normal tasks as before, albumin and casts in the urine alone remaining to remind the physician and patient of a serious illness. In the course of time these cases merge into the next group with retention of nitrogeneous products. These cases have been classified as interstitial nephritis.

We find the usual patient with little or no edema, a small amount of albumin in the urine, with a blood pressure which is gradually mounting. In the beginning there may be no retention of nitrogeneous products, but the tendency is that way. It is here that our functional tests prove of the greatest value.

Many methods of checking kidney function have been devised, but probably the most useful in the acute and chronic case of nephritis is the estimation of the retention of nitrogeneous bodies in the blood. The chief nitrogeneous body is urea, the determination of which is comparatively simple. Blood contains some urea, and on ordinary diet the amount ranges from twelve to twenty mgs. per hundred c.c.

It has been shown by Addis[1] and his coworkers that the kidney is capable of excreting seven times as much urea as is usually handled. We may presume from this that normally only one-seventh of the kidney tissue is utilized and probably fifty to seventy per cent of kidney function must be lost before retention occurs. In disease it is not uncommon to find fifty to sixty mgs. of urea per hundred c.c. of blood present with few symptoms.

Determination of retention of nitrogeneous products is of great value to the clinician, for it is probably the best gauge as to the actual work the kidneys are performing. As a gauge to surgical risk, the value of the determination of the retention of these products can not be over estimated.

The chemist has consistently sought for some retention products of the blood, the percentage determination of which could be used in early cases of kidney involvement. Uric acid and creatinine have been extensively studied, but probably the estimation of urea is of as much value as are the determination of these products.

The well known phenolsulphonephthalein functional test by Rowntree and Geraghty[2] is readily adaptable to clinical use. The dye is nontoxic and readily eliminated by the healthy kidney, but more slowly and occasionally scarcely at all when those organs are diseased. One of the chief advantages of this test lies in the brilliant red color produced when an alkaline solution is added to the urine. An accurate estimation is quickly made by the usual colorimetric method. An additional advantage as a functional test is that an accurate determination of the time of appearance of the dye after hypodermic injection can be made by cathetrizing the patient. When disease involves a single kidney, as is frequently found in surgical conditions, the function of each kidney may be determined as a unit by cathetrizing the ureters. Urea estimation of the blood is of but little value when dealing with lesions present in a single kidney, urea of the blood giving us a gauge only of united work of both organs.

As a functional test in chronic nephritis, phenolsulphonephthalein has the same disadvantage as the determination of the retention of nitrogeneous products in the blood, in that probably fifty per cent of normal kidney function must be lost before phenolsulphonephthalein secretion is materially reduced. In carrying out this test, three hundred to four hundred c.c. of water should be given one-half hour before the injection of the dye to promote free action of the kidneys. A colorimeter of the Bock-Benedict type is very satisfactory, while the readings made by test tube controls give an error of ten to twenty per cent and should not be used.

The estimation of kidney function by other dyes, such as indigocarmine, is probably of no greater value than phenolsulphonephthalein, in that these tests will not determine the damage which has occurred in the kidneys until the normal kidney function is markedly reduced.

Clinicians have observed for many years the inability of many nephritics to produce a urine of high specific gravity. In fact, this may probably be the only indication found pertaining to a grave kidney condition. Christian[3] and others have given us so many examples of "fixation of specific gravity" at a low level, that we must accept it as an established fact. In contrast, in normal persons, we have a variation in the specific gravity of the urine from time to time. Many methods have been studied in an endeavor to take advantage of the low "fixation of specific gravity" as a test for kidney function.

A fundamental principle in determining the functional reserve power of an organ is that the organ tested must be placed under "strain." Addis and Shevky[4], of the University of Stanford, have worked out a test to determine the ability of the kidneys to produce a urine of high specific gravity. This test is simple in its procedure and yet incorporates the principle of "strain." To quote from Addis, "The subject is instructed to abstain from fluids of all sorts after breakfast on one day until he rises from bed on the following day, and is told to collect a twelve hour night urine. The whole twelve hour urine should be collected at one voiding, but if this is not possible, the patient should be told not to pass urine for at least three hours before the completion of the specimen. The usual diet must be taken, except that water, tea, coffee, milk, soup or any other fluids must be avoided."

The average normal specific gravity, under this condition was found to be 1.032 with a standard deviation of .00281, and a variability of 8.8 per cent.

This test is of great value, but like all of our tests must be interpreted with caution. Where a patient is able to produce a urine of high specific gravity, we may be sure that the kidneys are eliminating the waste products of the body. On the other hand, a low specific gravity determination has no such value, for many factors may favor the production of a low specific gravity urine in a subject being tested. However, if all factors are carefully checked, the constant "fixation of specific gravity" at a low level is of value. I believe this test will be found useful to the man who is not prepared to make a blood urea or a phenolsulphonephthalein determination.

SUMMARY

1. Fifty to seventy per cent of the normal function of the kidney must be lost before our functional tests become of value.
2. Determination of retention products of nitrogeneous metabolism in the blood is the best gauge as to kidney function now known, urea of the blood being a satisfactory gauge as to retention.
3. The estimation of the ability of the kidneys to produce a urine of high specific gravity is a valuable aid in determining the function of the kidneys.

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DIAGNOSTIC PITFALLS IN THE SPHENOETHMOIDAL BORDERLAND *

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Lying between ophthalmology and rhinology, the sphenoethmoidal labyrinth has for years enlisted the attention of our foremost teachers and clinicians. The names and achievements of those pioneers who blazed a way into this territory are not necessary here. Americans have had an enviable part in the exploration.

In spite, however, of all the light that has been turned upon this curiosly intricate region, many of us are prone to stand without in fear and trembling, until, like Dante,

> "In the midst of the journey of our life
> I found myself in a dark wood,
> Wherein the direct way was lost.
> Alas, how shall I say how hard,
> How wild and rough and difficult was that wood;
> Only to think of it my fear returns!"

May we not profitably consider some of the traps and pitfalls of diagnosis that beset the unwary, and then decide what anatomic and etiologic helps we may call in.

The eye, considered far too often by itself, may present in such cases, in the anterior segment, keratitis and descemetitis, in the lids edema and proptosis, in the posterior segment uveal and chorioretinal disturbances, not to speak of thromboses, neuritis and papilledema. It is the fashion to attribute these things to teeth, tonsils, antrums or frontals, if distant sepsis be considered at all. Too frequently such patients, forbidden tobacco and alcohol, have traveled the limit of ocular therapy, from drops to subconjunctival injections; Wassermanns, blood and spinal, have been done; milk injections have been tried; repeated refractive attempts have accumulated an arsenal of glasses. Such people, if a paretic fourth nerve be present, may be hammering away with prisms and pencil exercises. Others, imprisoned behind dark glasses and in darkened rooms, hear guarded prognoses of impending blindness. Contracted fields and scotomas place others upon a useless course of miotics, especially if they are unlucky enough to approach the limit of tension and to have a deep physiologic cup. The insidious and resistless march of multiple sclerosis is said to threaten others, while tabes is the pitiless diagnosis visited upon some.

Some of us are far too prone to look at the anterior ethmoids and frontals, forgetting the vast

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assistance furnished by the postnasal mirror and, better still, the nasopharyngoscope. The telltale scarlet streak behind the posterior pillar ought to mean much, beside an opportunity to use the spray and the applicator. No opportunity should pass for the careful examination of the pharyngeal vault. Diagnosis of persistent adenoid, of Tornwaldt's disease, of ozena, may all be made in cases of sphenoethmoidal disease. Confusion may rise and ear symptoms come into consideration, when polypoid posterior ends of turbinates are present. Fibromata, myxofibromata, grading imperceptibly into fibrosarcomata, must be differentiated from hyperplasias of sinus inflammation. The infrequency with which the sinuses are treated in cases of loss of ciliated epithelium, with consequent crusting, accounts for much of the extension of postnasal infection to the endolaryngeal and tracheal mucosa. A cough, hoarseness, pink cords, mean that the mirror has been turned downward, instead of up; chest radiographs, "enlarged peribronchial lymph nodes," "suggestive areas of dullness," and even sanatorium life may result. Asthmatic symptoms are too often considered in their pulmonary and cardiac relations, without reference to protein allergies or anatomic defects.

Otologic findings are obvious corollaries of those in the nose and throat. Chronic catarrhal otitis media, progressive, relentless in spite of repeated catheterization or skilful bouginage; reinfection of beautifully clean mastoid cavities and of "dry" open drums; tinnitus that varies with the barometer; these things ought to suggest investigation of the sphenoethmoidal recesses. Often, however, such a course is an afterthought. Severe otalgia with a normal drumhead, after much worry over possible mastoiditis, eventually sends many patients from otologist to dental radiologist and thence without benefit of clergy to the extractionist. May we not speculate a little upon the possibilities of dental salvation, if the otalgia had been tested out by a careful cocainization of the region of the sphenopalatine ganglion? Sluder's work in this field has been of very great value.

The neurologist is an angel of mercy, with his alcohol injections in tic doloureux; but, again, the possibly of pressure in the region of Meckel's ganglion should be tested out before sensation is destroyed by the alcohol needle. Hysteria, with interlacing fields and fatigue spirals, may be closely imitated by the true pathology of retrobulbar neuritis.

Pituitary lesions, cystic or neoplastic, have a rather characteristic set of neurologic and ophthalmologic findings, very distinct from those of sinus disease. Yet both processes have received indiscriminate crossfiring of the x-rays, in the attempt to produce endarteritis and starvation of neoplastic or inflammatory tissues. It should be obvious that the immediate results upon an inflamed optic nerve, choked with edema in its tight collar of bone, would approach strangulation; and such cases often occur. The increase in intracranial pressure from x-ray crossfiring of a pituitary may be vastly dangerous. Deep therapy of the sort, conducted with necromantic caution in darkened rooms, tho mightily impressive to the patient and his doctor, can in the nature of the crowded anatomy of the skull scarcely fail to share the dangers of the old-fashioned shotgun prescription. The rays scatter; they cannot select inflamed cells from among the healthy ones. Very different would be the direct application of accurate surgery, with the use of radium introduced (in an upward-opening leaden shield), after Wilson Johnston's method, into the sphenoid cavity.

Generally considered, such are some of the doubtful conditions in ophthalmology and otolaryngology which should suggest an investigation of the accessory sinuses. Anatomic details, enormously variable as may be seen from the series of seven sphenoids shown herewith (procured from seven successive postmortems with no effort at selection), make close study of each case imperative. The x-ray is a help, but it cannot make a diagnosis. Stereoscopically used it is much better. For special detail, especially of the optic forearm and sphenoid from behind, the position of Rhese, introduced here by Iglauer, is excellent. Law and Pfahler each have excellent and well studied anterior and anteroinferior views. Laterals mean little except for cases involving the sella turcica. White of Boston has made a difficult study of optic foramina from the outer inferior angle of the optic foramen and sphenoid from behind, the are more likely to favor neuritis than are the larger ones. It is, however, so difficult to get the exact axis of the foramen without several attempts that this procedure is not recommended.

Thickenings high up in the nasal septum, causing impingements, outward displacement and flattening of the middle turbinates, are far more important than deflections near the floor or forward. Marked sphenopalatine neuralgia, favoring conditions for protein irritation, easy mechanical obstruction at the slightest mucosal swelling, come from these high thickened tubercles. Asthmatic cases nearly all have them. If opposed by a large cystic middle turbinate, the blockade is complete. Water from swimming chlorinated or clear, entering such a nose, need bring with it no more than such germs as it finds in the nasal vestibule, to create immense and immediate damage in the ethmoid. Add to this the influence mentioned by Taylor, of exposure to chilling while sitting about in a wet bathing suit, and include the infestation of our population by an attentuated streptococcus ever since the epidemic of 1918, and it will readily appear that we are justified in expecting sinus involvement in many more bathers than appear for treatment. Such turbinates may be so tightly jammed against the septum as to prevent egress of fluids from the posterior cells until a vertex or mastoid pressure-headache has arisen. Frequently when such a turbinate comes off, no pus is found, but a nest of cells is found, lined with thick, crimson mucous membrane, from which a virulent streptococcus may often be recovered. From the posterior cells there is often no other sign than the scarlet erosion or the vertical cord of irritated-lymphoid tissue behind the posterior pillar of the affected side. This irritation may increase to a serious dryness or burning above the soft palate, which is not helped by naming it postnasal catarrh, or cured by retrograde syringing. When the mucosa finally becomes scarred and loses its ciliation, hard crusts which are most difficult of removal stick to the upper surface of the velum.

These few large posterior cells may indent the sphenoidal wall and may encircle the optic nerve with a thin shell. In such a case Van der Hoeve has traced bacteria directly into the neural sheath, and has demonstrated microscopically the toxic leukocytosis and edema. Such are the cases in which sudden blindness has come from reckless curettement or use of forceps; cases which all have seen, wherein a sense of red sparks or other flickering photophores attend any use of instruments or swabs.

The sphenoidal aperture may sometimes be well seen from below with the nasopharyngoscope, but rarely if ever from the nostril until after partial turbinectomy. A vertical slit, it lies high on the anterior wall of the sinus. The cavity itself is very variable. One side may be practically absent. The pituitary fossa and entire optic chiasm may be undermined by a paper-thin sphenoidal roof. Laterally the carotids may indent the sphenoid very deeply, a fact of occasional importance in cases of carotid atheroma with visual-field disturbance, as noted by De Schweinitz. Fibromata may rise from the thin walls within, but oftener from the thicker pharyngeal wall below, where heavier arterial supply is at hand. Skillern, with conservatism based on vast experience, warns against tearing down the ostium and anterior wall too far, because of this dangerous area for hemorrhage. Considering the angle of vision from the anterior naris, it will be evident that no observer can possibly see the floor or posterior inferior angle of the average sphenoid, merely the roof, thru the enlarged ostium, and the anterior wall. The probe will help hunt out corners in the depths; the curette is out of place. The nasopharyngoscope can rarely be put in far enough to be of service.

Sphenoethmoidal symptoms mentioned by the patient include photophobia, often manifested first by artificial light. Such patients will be found wearing tinted lenses and complaining that they are never free from a slight cold in the head. Ring scotomata, bitemporal limitations of the fields, enlargement of the blind spot and color scotomata are commonly not looked for until other marked symptoms occur, and represent changes in the optic nerve and retina often overlooked except by the most accurate observers. A simple eye-to-eye test of the gross field for white is often ample to pick up these beginning defects. Bjerrum's black felt tangent sereen, or the translucent gray celluloid screen recently shown by us, will map out these central and paracentral scotomata very rapidly. Infiltrating edema of the perineural tissue is responsible for visual field changes in most cases of this kind. Direct pressure from empyema or mucocele is very uncommon.

Involvement of the anterior ocular segment by blood-borne toxins from the sphenoethmoidal region is rather less common than from the teeth and the tonsils, but such a contingency must be remembered. Incidentally it may be recalled that packing the middle meatus with cotton in the effort to demonstrate pus is often futile. Some of the most virulent streptococcic cases will barely show moisture; the crimson or dark gray mucosa of an exposed cell will tell the story.

Within the eyeball signs of retrobulbar neuritis may be noted. Prolonged edema of the nerve leaves behind a greyish striation and a marginal pigmentation about the nerve head. Vitreous opacities, hemorrhages and floating webs are quite unusual in our experience.

Vision, altho much reduced while the active process is going on, commonly returns with astonishing swiftness after opening and aeration of the affected cavities. We have not yet observed a case of neuritis cured by intranasal procedures which suffered the least damage by gradual return of the eyes to ordinary use.

We have been very frequently and forcefully reminded that even in apparently uncomplicated cases for refraction, or in cases of rather obvious muscular imbalance, the clue could not be found without thoro examination of the nose and its accessory cavities.

As, with Dante, entering the "hard, wild, rough and difficult" way thru the sphenoethmoidal borderland, we may experience similar relief on the successful completion of one of these cases, leaving such an Inferno, "thence issuing, we again behold the stars."

616 Journal Bldg.

THE POSTOPERATIVE TREATMENT OF THE MAXILLARY SINUS BY THE IONIZING OF ZINC. REPORT OF CASE *

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This, I believe, is the first report made of the use of this treatment for suppurative conditions of the sinuses, for I have been unable to find an account of its having been used.

Aside from the application of this method of treatment in this case, the case itself is of interest from the standpoint of the surgical procedure employed. It is briefly as follows:

Miss L., suffering from neuritis, was on Feb. 22, 1922, referred to Dr. B. for the extraction of teeth and other dental work. He extracted the upper right second molar which showed no evidence of an unusual condition of the bone, so he proceeded to remove the first molar. As soon as the tooth was loosened, a straw-colored fluid started to flow and, as the tooth was removed, the fluid gushed out, filling the patient's mouth and running over the operator's hand in such quantity as to saturate a large portion of a towel. As the tooth came out, a large piece of the tuberosity was fractured and was loose so it was removed, also the cyst which had contained the fluid was taken out by artery forceps from a cavity in the outer wall of the superior maxillary bone and from the maxillary sinus. The cavity extended backward and upward, free of the root of the second molar but was broken open by the extraction of the first molar. The sac was about the size and shape of a man's thumb. The opening in the alveolar process was a half inch wide and even longer.

In this condition the patient was referred to an oral surgeon. Dr. S., the oral surgeon, under local anesthesia, curetted the antrum and closed the opening by sutures, which was only partially successful, for the sutures gave way, and the opening recurred. Thru this opening he irrigated the antrum for several weeks and during that time several attempts were made to close the opening, accompanied by some success, so much so, that when I first saw the case the opening was only about 6 mm. long and 2 mm. wide.

The case was referred to me on Sept. 6, 1922. On Sept. 9 I made a small opening into the antrum under the right lower turbinate, thru which we irrigated the sinus, hoping by this means the opening into the mouth would have a better chance to close, but with no success. On Oct. 10, a month from the time of making the opening, I resected the anterior one-third of the right lower turbinate and enlarged the opening from the nose to the antrum to afford better drainage, and at the same time I attempted to do a plastic of the mouth by removing a part of the scar tissue around the opening and turning a flap from the region of the tuberosity. This flap sloughed out and the condition was as bad as before. We continued to irrigate the antrum daily thru the nose and from time to time freshened the edges of the opening into the mouth by curetting them, hoping it would close by granulation, but no results were obtained.

Discouraged by so many failures, we decided to make one final attempt. On Jan. 4, 1923, the patient was sent to the Eye, Ear, Nose and Throat Hospital and under general anesthesia we removed all the scar tissue from the wound in the mouth, thus making an opening large enough to admit my first finger to pass freely into the sinus. Thru this opening by means of my finger and forceps we removed a large quantity of polypoid tissue. This was followed by curetting away the remaining diseased tissues. I had planned to do a radical Caldwell luc operation, but this was unnecessary, owing to the large opening thru the alveolar process.

We next made a median incision of the hard palate thru all the soft tissues to the bone, including the periosteum, extending from back of the incisor teeth to the posterior border of the hard palate; another incision parallel with the lingual border of the right alvelor process, outside of the posterior palatine vessels, was made; then with a periosteum elevator we loosened the tissues of the right half of the roof of the mouth, including the periosteum, care being taken not to injure the posterior palatine vessels and nerve, thus freeing the tissues anterior and posterior to the original opening, so that, when the sutures were placed to close the wound, there would be no tension on the tissues.

I had planned to attach the outer margin of this bridge of tissue to the periosteum of the outer wall of the body of the superior maxillary bone, but when the attempt was made there was no bone except a few fragments like egg-shell attached to the soft tissues. Consequently we dissected these tissues well above the level of the alveolar process and with silkworm gut sutures we anchored the lateral margin of the bridge to the soft tissues high up, covering all the raw surfaces and leaving the median incision to heal by granulation. The sinus was packed with iodoform gauze and the patient returned to her bed.

The following day I found the patient had vomited a great deal during the night but the sutured wound was looking well; there was some oozing from the nose, but none from the mouth. The median incision was gaping widely and the edges were pulled well away from the bone. Two days later, Jan. 7, the packing was removed and the antrum irrigated lightly. Hereafter we irrigated the sinus daily thru the nose, removing large quantities of pus.

On the eighth day following operation the stitches were removed and the wound remained closed.

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* Read before the Oregon Academy of Ophthalmology and Oto-Laryngology, Portland, Ore., Oct. 22, 1923.

On Jan. 24, twenty days after operation, the lateral wound was completely healed and the median incision still had a small amount of granulation.

By Jan. 30, twenty-four days after operation, both wounds were completely healed. There was a great deal of pus draininge from the sinus. This drainage kept up for weeks with more or less pain in the antrum, face and side of the head. After weeks of irrigation the discharge gradually decreased until there was a collection of thick heavy green pus in the sinus with but little drainage into the nose. At times there was considerable odor to the secretion, and flakes of bone were washed out.

Nearly six months later, on July 10, the patient's nose looked clean except a small amount of pus under the lower right turbinate. We washed some pus from the antrum and ionized it with 3 m.a. of current for ten minutes.

On July 14 the amount of pus had increased since the last treatment with considerable pain in the antrum, side of the face and ear. The patient was very nervous, therefore it was very difficult to keep the solution in the sinus. We washed about the same amount of pus from the antrum as at the last treatment, but noticed no odor. We ionized the antrum with 3 m.a. for ten minutes.

About two weeks later, on July 30, there had been less pus draining from the sinus since the last treatment and there was no odor. The patient complained of pain in both ears; aside from the drums being retracted the ears seemed normal. The sinus was perfectly clean; in washing it the water returned perfectly clear. The walls of the antrum seemed more sensitive to pressure and the patient complained of more pain caused by the current during the treatment, which lasted ten minutes and we used 3 m.a. of current.

On Aug. 3, three days later, the discharge had been about the same but the patient had suffered more pain since the last treatment. We washed a small amount of thick green pus from the antrum, and ionized it ten minutes using from 1 to 2½ m.a. of current. The apparatus was working so badly that I could not maintain the current at one level for any length of time. This was the most unsatisfactory treatment of all.

A week later, August 10, the discharge was the same as before. We washed a thick green scale of pus from the antrum and the patient complained of having had pain under the eye and the side of the face, but the pain in the ears had stopped. She now complained of subjective noises in the head. The sinus was quite sensitive during irrigation and she complained of much burning and pain during the treatment and for some time after. This was the most satisfactory treatment we had, for the current stayed at 3 ma. thruout the ten minutes of the treatment.

During the following three weeks the patient went for a vacation and on Sept. 1 reported that following the last treatment the discharge was very much increased for a few days, then disappeared entirely. On the day of the report we irrigated the sinus and the water returned perfectly clear. A month later the patient reported that the sinus was still clear with no discharge for a month and a half. As this is the only case I have treated by this method, I have no basis for a prognosis.

The technic is simple, but a little more difficult than that used in the treatment of the ear, tho the principle is the same. For the positive electrode, which is placed in the antrum thru the window under the turbinate, I use a zinc wire passed inside of a No. 17 French soft-rubber male catheter, cutting it off at the proper length and bending it in the shape best fitted to the opening thru the wall under the turbinate. The current must be passed thru the solution and the zinc electrode must not be exposed beyond the end of the rubber tube so it may come in contact with the tissue, for, if it does, an ulcer will surely result. It is much more difficult to keep the sinus full of the solution so that all the surfaces are covered, so that they will receive the effect of the zinc when the current is turned on, for with the slightest movement of the patient the solution will run out of the nose or down the throat and the current will fluctuate with each fluctuation of the solution. It may be easier to place the electrodes first and get the patient comfortable, then fill the sinus with the solution. The hand is placed in a container of water, to which the negative pole is attached, thus completing the circuit.

I have used the same one per cent zinc sulphate solution we have been using in the treatment of ears but it might be better to use a one-half of one per cent solution at first until the patients have learned what is expected of them, so that, if it should run over into the throat, it would be less irritating.

The extreme caution is not required in turning on the current in these cases as in the treatment of the ears, for there is no dizziness produced, but some care should be taken on account of the burning.

In this case quicker results might have been gotten, if the ionization had been done at shorter intervals, for I feel that I lost the effect of one treatment before another was given and the cumulative effect was lost.

915 Stevens Bldg.

The Phenoltetrachlorphthalein Liver Test. Eighty-six patients were studied by Sigmund S. Greenbaum and Herman Brown, Philadelphia (Journal A.M.A., Jan. 12, 1924). Liver function, based on the phenoltetrachlorphthalein test, was but slightly or not at all (70 per cent) altered in patients who received from one to forty-five intravenous injections of the arsenobenzenes. Seventy-five per cent of the patients who had received from forty-five to 124 intravenous injections of arsphenamin or neoarsphenamin or both showed no liver dysfunction. Patients who develop a toxic icterus are not to suffer from permanent liver dysfunction. When the acute phenomena have disappeared, the permanent liver dysfunction is not associated with apparent clinical disturbances. Altho liver dysfunction could not be demonstrated in patients with acute reactions following the administration of the arsenobenzes, yet the phenoltetrachlorphthalein liver test ought to be performed on those syphilitic patients showing some forms of intolerance to the arsenobenzenes (itching, tingling in the extremities and mild dermatitis in particular). Icterus is too late a sign of toxicity.

VERTIGO AN OTOLOGIC STUDY

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As a general practitioner of medicine for several years, I remember of no one symptom presenting itself as a perplexity more often than dizziness or vertigo. At that time it was continually coming up in one case after another as a prominent distressing symptom, and one from which the patient often sought relief. The anemics, Bright's and heart cases had dizzy spells. The chronic running ears, autointoxications, and acute febrile cases had dizzy spells, and indeed many others, who in the absence of such a symptom would not have sought the services of a physician.

Needless to say, these cases went unsolved so far as knowing the cause for this most annoying complaint. It must be more or less baffling to others who have not made a special study along the lines of otology, and it is with the hope of encouraging a closer cooperation between the general man and the otologist that this paper is written.

A great deal is being said today among otologists on this subject, but I do not believe enough of the information finds its way to the general practitioner who first sees these cases; and I do not think it amiss at this time to pass along some of the things I have learned as an otologist which should be of value to the general man.

Vertigo, in all its phases, is primarily an otoneurologic study, and to this special field must be directed our attention, if we are to get a comprehensive-understanding of the same. Why should it be in the field of otology? We shall see.

Remember this, that no matter what the disease is, if vertigo is present, the otologist is best able to ascertain its significance and this can be done to a nicety in a large percentage of cases. Indeed, the pioneers in the work, who gave us our understanding of this subject, are all otologists. Dr. Barany of Vienna, Dr. Shambaugh of Chicago and Dr. Jones of Los Angeles contributed largely to the sum-total of our knowledge. The first named, in 1915, received the Noble prize for his researches along this line.

From their work we learn of the seventh special sense, kinetic-static sense, the end-organ of which is located in the temporal bone, and the normal functioning of which gives us balance. Just as the correct action of the eyes gives us binocular vision, so the correct functioning of this special end-organ, the vestibular apparatus in the inner ear, gives us perfect equilibrium. Any condition interfering with this function results in vertigo, which may be accompanied by palor, sweating, nausea and nystagmus. So then, let us bear in mind that all dizziness from any cause means just one thing physiologically, and that is irritation or overstimulation of this balance mechanism in the inner ear.

To go into the anatomy and physiology of this vestibular apparatus is an inexhaustible study and one involving a good understanding of nervous anatomy. But one does not have to delve so deeply in order to get a fair clinical knowledge at least, and I consider this the most valuable to the general man. The otologist, however, who does vestibular analysis must know the central nervous system. If you will compare the labyrinth, with its semicircular canals, saccule and utricle, to the retina of the eye; the vestibular nerve leading from these structures thru the temporal bone into the middle fossa and into the pons and medulla to the optic nerve with its chiasm and complex termination in the brain, you will realize we have to deal with a structure exposed to the multiple lesions flesh is heir to. And remembering that anything which interferes with the normal impulses thruout this pathway from beginning to end will result in vertigo, you begin to realize why dizziness is so common.

What is the practical value of knowing this? Let us consider a patient with vertigo and see. We know from the above that there is a lesion somewhere in the vestibular apparatus. Such involvements are of four classes, viz:

(1). Local involvement of the internal ear, as pus infections, hemorrhages or effusions into the labyrinth, anemias, hyperanemias and degenerations from constitutional cause.

(2). Any involvement by a lesion affecting the intercranial pathways to the brain stem and its central pathways thru the medulla, pons, the six peduncles, cerebellum, curra cerebri, pyramidal tracts, internal capsule and cerebrum. Such lesions as tumors, hemorrhages, thrombosis, infarct, abscess, gumma, tubercle, leukemic infiltrations, specific neuritis, multiple sclerosis, syringomyelio-, polioencephalitis and meningitis.

(3). Involvements by eye disturbances because the central nuclei of the eye muscles are directly connected to the vestibular mechanism in the posterior longitudinal bundle, refraction errors and any lesions affecting eye muscles or their nerves, oculomotor, abducens and trochlear.

(4). Involvements of the mechanism by toxemias from any source; ptomaine poisoning; chemicals, as lead, quinine, salicylates and alcohol; systemic toxemias, nephritis, syphilis, focal infections and exanthematous diseases; the dizziness from any of which is transitory or more or less permanent, depending on the damage to the mechanism.

By experimental study and tests applied to the vestibular mechanism, the otologist knows what reactions to expect in a normal individual. The tests are applied to the ear by turning the patient in a chair, by applying hot or cold water to the tympanic membrane, or by the electric current. The reactions are nystagmus, vertigo, a tendency to fall and to pastpoint an object held in front of the subject. The patient with a lesion of the vestibular apparatus, however, does not give these normal responses, and it is this variance from the normal that gives us valuable information as to where to look for the trouble and what is producing it. By the tests we try to learn: (1) Whether the lesion is central or periphereal; (2) whether it is a toxic lesion, transitory or permanent; (3) if central, at what point in the brain.

In many cases the tests alone will reveal the answer, and in every case the results of the tests will aid in diagnosis.

The general practitioner should be familiar with the possibilities of this work. He will be unable to do it satisfactorily because of its technicality. The otologist can be of great service in helping him solve these problems and clarifying diagnosis which otherwise may be more or less puzzling, and in advising the course of treatment to follow in each case.

The brain surgeon of today would hesitate before operating for intercranial conditions without a study of these tests, because in many cases they reveal the logical site of the lesion. The neurologist treating certain types of nerve syphilis relies as much on the tests as a guide to treatment as upon the Wassermann reaction. The otologist knows that his report on any patient with vertigo is as good as no report at all, without a thoro examination of this delicate mechanism. The general man must realize that it is no longer necessary to explain dizzy spells to his patient as from "liver trouble," "stomach upset," etc. There is a scientific explanation for each case and the cause can be diagnosed accurately.

THE POSSIBILITY OF EXTENDING HUMAN LIFE

During the last few generations the science of preventive medicine has developed so greatly that it is now possible to prolong human life. This has been demonstrated practically by the tables of life expectancy of the great insurance companies of the country. In the Harvey lecture delivered before the New York Academy of Medicine, Dr. L. J. Dublin, statistician of the Metropolitan Life Insurance Company, endeavored to answer the question as to how far this matter of extending human life may continue. An analysis of the life table of 100,000 persons shows that at the moment of birth they have ahead of them a total of 5,148,536 years, which is an average length of life of 51.49 years for each of them. This figure is known as the life expectation. The maximum expectation of life is at the period of three years of age, however, when it is 57.72 years, because at this age the child has already overcome the heavy mortality of the first two years of life Naturally, as life goes on, up to a certain period, the expectancy diminishes numerically and increases proportionately so that a man of 25 years has an expectation of 39.6 years, at 40, 28.2, and at 50 almost 21.

This means that persons surviving to the age of 50 may, on the average, expect to survive to the age of 71. A great number of such persons, however, will live considerably beyond 71 and a small number may even live until 100. Even at 70 years of age, according to the life tables, there are more than nine years of expectation.

As Dr. Dublin points out, the expectation for women is greater than that for men. At birth a woman has an expectation 3.33 years greater than that for men; at 30, 2 years greater; at 50, 1.33 years greater, and at 70 about 0.5 years greater.

Thruout the country, during the last 70 years, life expectancy has increased 12.5 years. In Masachusetts, during the last 65 years there has been a gain in life expectancy of 15 years.

In analyzing the various atempts that have been made to prolong life and to decrease mortality at various age periods by the control of infectious disease and by periodic physical examinations Dr. Dublin concludes that it is possible to attain large results in increasing life expectancy in the future. Altho diseases like tuberculosis have declined greatly, the conditions that reflect personal hygiene and the general care and use of the human body, such as heart disease, Bright's disease, and other diseases affecting middle life, are not declining. Three conditions, heart disease, Bright's disease, and cerebral hemorrhage, curtail life expectancy by about four years. If it is possible to reduce the mortality of these conditions 50 per cent at any age period, the expectancy at that period will increase proportionately.

Considering all of the data available as to life prolongation and the prevention of disease, Dr. Dublin constructs a hypothetical life table that expresses the best mortality we may hope for with our present knowledge. Such a talbe indicates a total expectation of life to be 64.75 at birth, or an increase of 10 years in the present span of life expectancy.

—Hygeia.

The Use of Benzyl Benzoate in the Treatment of Angina Pectoris. The first use of benzyl benzoate in Heberden's angina is credited by Robert H. Babcock, Chicago (Journal A.M.A., Jan. 19, 1924), to Dr. Bayard Holmes, Jr., who stumbled on to its ability to relieve this formidable affection thru prescribing it for renal colic. In 1919, since that time, Holmes and Babcock have prescribed the remedy in approximately twenty instances of what seemed to be typical attacks of angina pectoris. In five of these cases decided relief of the pain followed the more or less continuous use of the drug. Prolonged use of this remedy over many months has not apparently been attended by unpleasant or harmful effects, and only rarely has a patient complained of stomach disturbance. It is always prescribed in milk or cream, and generally in 30 drop doses four times daily. The remedy is not believed capable of correcting the pathologic condition responsible for the distress. It is strictly palliative and not curative. Nor is it believed that it will ward off the fatal catastrophe which terminates more or less suddenly practically all cases of organic or true angina pectoris.

SELECTED ARTICLE

SAY, DOC, WE'RE GLAD YOU'RE HERE*

By Charles Merz

You who know and love the small town will recognize Dr. Hodge. He pulled most of us thru childhood and adolescence; now he is an old man, grown gray in the service of humanity. In equipment he is hopelessly behind the times, but he goes on working night and day saving lives and helping the afflicted. He hasn't much time to bother with sending bills, but he is richly paid in the love of his people, and that is the thing he cares about most. Mr. Merz has drawn this picture from his heart. His father is a country doctor.

It is true that Dr. Simon Hodge shows signs of wear and tear. A long struggle with the spirit and the flesh has tired him.

His patients tell you that there are moments in his office when he drops off into unexpected slumber. Sam Bole came in one day a week ago to see about a cough that troubled him. The doctor hooked a stethescope around his ears, put one end against Sam's chest, thumped him once or twice, leaned back in his chair, told Sam to take a deep breath and start counting. Sam obeyed. And then, quietly, as if he'd lost himself in meditation, Dr. Simon fell asleep and let Sam get above a hundred.

Incidents like that grow commoner with time; some patient chronicles a new one every now and then. But they do not measure Simon Hodge's usefulness to his community.

He is a familiar figure on the scene in Centerville, so familiar that the whole town takes his usefulness for granted. Everybody knows him. Everybody unloads trouble on his shoulders. He is a semiprivate, semipublic institution like the bank. What small portion of the town he did not personally help bring into the world, and wrap in swaddling clothes, he has subsequently patched for broken limbs or argued with for gout.

Centerville, to be sure, is town enough to boast a choice of doctors. Simon Hodge has two young colleagues. But neither of them really counts. For anything more serious than chickenpox or measles, the whole town turns instinctively to Dr. Hodge. Tall, white-haired, well on the road to seventy he has been writing the same old-fashioned remedies in a dog-eared prescription book for more than forty years.

What is left, of the youth with which he started? Two things you might notice if you saw him. First his hands: long fingers, trembling slightly, but still admirably nimble in their trade. Then his eyes: brown eyes, badly focused, looking on expectantly for some thing they have never seen. Born three generations back, the chances are that Simon Hodge would have hung a landscape in the Academy of Art or sailed a frigate on the Spanish Main. Perhaps it takes a man like that, in 1923, to be a country doctor.

A weather-beaten old automobile pulls up against the curb and chokes its motor. Dr. Hodge dismounts, starts up the walk, remembers he has left his bag, and turns back again to get a tattered satchell.

All Centerville is interested in health—especially its neighbors. Nothing else arouses half so much discussion as a new illness up the street, or a sudden complication in an old one. Cities have nothing of the sort to draw upon, for civic interest. The whole town knows the intimate details of Harvey Day's new diet, of Newton Smith's recovery from tonsillitis, of Ned Frye's stubborn battle with lumbago. "Mr. Garvey's stomach trouble must be getting worse," the banker or the butcher or the parson tells his wife at supper. "I see Doc Hodges car stop there this morning."

"Stopped again, did he? How long this time?"

"Well, he was gone when I came back around the corner. Still, it looked like it might be something serious. I noticed that the doc took both bags with him when he went into the house."

Everybody knows, before the day is over, where Simon Hodge has stopped, how long he stayed, and what was probably the answer. Sometimes, of course, you can't be sure. It isn't as if a "specialist" were calling. The small-town doctor still remains a general practitioner. Almost any malady may bring him to his patient's door.

Time was, of course, when doctors everywhere were "general practitioners." The human body had not been divided yet into semi-independent organs each determined on its own career. Then the day of "specialists" began. One man took legs, another eyes, another ears and throat. Patients began to pass along the line, from specialist to specialist, like water buckets at a country fire.

Certainly the process put men on the track of knowledge. Give a man the third bone of the middle ear to handle, and the chances are he will know more about it at the end of thirty years than he could ever hope to know about the human form from stocking feet to shoulders. The specialist is gaining ground. But not in Centerville. For Simon Hodge a doctor's day is still the old-time medley. A bandaged leg at six o'clock; a pair of spectacles at seven; whooping cough and broken backs; mumps and scarlet fever.

Whatever else you may say of him, the doctor in a small town profits from a wide perspective. How wide?

Ben Welsch steps out on Maple Street to flag the flivver. "Say, doc," he shouts, "I been meaning to call you up all week. Had a little trouble. Of course it isn't just exactly in your line, but I was thinking. Say, you know that old bay mare of mine—"

Lined up along the wall of Simon Hodge's waiting room, almost any afternoon at four o'clock, sits all the evidence you need to prove the ample stretch his practice covers.

It is a thoroly uncomfortable spot to wait for anything, this office, most of all to wait for news that may be bad. Six chairs, straight-backed and blisteringly hard, hold out a frigid invitation. There is a table up against one wall; but the reading matter it commands is not inspiring; two copies of the State Survey of Roads, a guidebook to "Historic Spots in Lucas County," a Bunce & Burlap catalogue of seeds for 1920. Still, even in this barren place, an all-absorbing interest in one's neighbor's illness never slackens; patients wait their turn on prison chairs and carry on a lively barter in each other's symptoms.

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* Reprint from Collier's, The National Weekly, Jan. 12, 1924.

Meantime, beyond the door that creaks a warning when it wants another volunteer, the inner office of the doctor opens a dimly lighted cavern. At the window, catching what small sunshine comes over the wall outside, a cedar desk bows down beneath a load of half-forgotten papers. Beside it, on the wall, is perched an ancient telephone with nickel-plated eyes and long retrousse nose; farther on, a small enamel basin gurgling with a stream of water; a row of dusty volumes slowly parting with their backs; a chart for testing patient's eyes, beginning with a monstrous X and ending with a row of letters small enough to bid defiance to an eagle. There is a skeleton in one corner of the room, somewhat weird at night, when its lean ribs catch the unexpected glint of an electric light, but rather amiable by day: loose paws overhanging in a friendly simper.

No doubt a doctor from the city would find a good deal here to trouble him. Too much dust; too little sanitation. One case of surgeon's implements, it must be confessed, has been for many years a popular abode for summer flies. Not only that, but half its stock has been depleted; Dr. Hodge has burrowed into it for tools to make repairs upon his motor, help him with odd chores around the yard. Many a pair of surgeon's scissors made to slit the lining of the epigastrium has gone to clip the unruly garden hedge.

Certainly this small-town doctor, even without the inroads he has made on his own tools, is ill-equipped in the modern artillery of his trade. And none too well established in its modern learning. Peacefully, in his own corner of the world, he plods along with what his masters taught him years ago. He is out of touch with new experiments, unsympathetic to new names. It has been two decades since he sets himself to test a challenging and unwelcome theory. The old recipes are faithful friends; good enough for half a lifetime—good enough for what remains.

An old-timer in his tools and learning, an old-timer in his ways, Simon Hodge could never earn his living in a city. For tho the city doctor has too often been accused of high finance—of ordering unnecessary operations and prolonging illness just to run a bill—the fact remains that Simon Hodge is far less enterprising in his tactics than the average city man. Not only does he bar the door to patients, once he thinks them cured as promptly and as finally as an indignant father in a melodrama might disown a wayward son; he refuses to accept them, in the first place, until they furnish overwhelming proof that they are ill.

There was Marcus Harvey, for example; leading banker in the town; thought his heart was going back on him. Any doctor might have satisfied himself that he was justified in keeping Marcus on the list for an inspection now and then. Not Dr. Hodge. He didn't even stop the flivver the day he recommended Marcus to think less about his heart and give up highballs.

Mrs. Dusenbury is an even better case. Her husband is the one rich man in town. Time hangs heavily upon her hands. A new and interesting disease would be a godsend. Mrs. Dusenbury lately has been browsing in the psycho-analytic field. She finds she has a nervous system. She thinks it may break down. "Doctor", she tells Simon Hodge, "I think there's something wrong with my libido."

"Nonsense," Simon Hodge replies. "It isn't your libido. It's your liver. Drink a cup of water in the morning."

Dr. Hodge, you see, not only lets his patients profit from his own instinctive frankness if they're well and think they're ill; he meets them more than halfway if they are ill and haven't known it. "Ben," he'll say as he stops Postmaster Harley on the courthouse steps, "I don't like the color in your face. Too much mail, I guess. Why don't you lay off work a week?" Or: "Sam, I heard you cough away around the corner. Better try some cocillana. Get it at the drug store."

Nothing professional in the service. Neither Sam nor Ben will ever get a bill.

You might go farther. None of Simon Hodge's patients ever gets a bill. Not that it's a matter of philanthropy with him. He thoroly believes in bills. Periodically he resolves to set his books in order. But he has been resolving that for thirty years. He writes his memoranda on bits of envelope and writing paper: "Mrs. Jones, one call, $1"—nothing more; no evidence which one of several Mrs. Joneses is intended; no inkling of a date or reason why. "Lady over Pietschman's Grocery, two calls for tonsillitis." "Woman in red hat, fifty cents, examined teeth"; it is hard work to remember names; memoranda of this sort clog one drawer of Simon Hodge's closet. The lady over Pietschman's has long since moved to nobler quarters; the red hat has been laid away these fifteen years. Simon Hodge has made a dozen sets of resolutions. But the day of judgment never comes. He lives on what small tribute patients pay him of their own accord.

Bookkeeping doesn't interest him. Neither, really, does the technic of his own profession. If it did, you'd find him more alert, eager to keep track of progress that is being made.

No, when the last red hat is written on a slip of wrapping paper, one thing interests Simon Hodge, and only one: his people. That is why you find him on the road to seventy, still sticking to his trade. That is why he volunteers advice that no one asks for, why he works himself to illness when an epidemic hits the town, why all Centerville accepts him without wonder as a friend.

NORTHWEST MEDICINE
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EDITORIAL

BENJAMIN RUSH

During the formative period of our National Government the statesmen of the day were recruited from various occupations and professions. From the later were obtained lawyers, clergymen and physicians. Of the six physicians who signed the Declaration of Independence, two later became judges, one chief justice, one an iron manufacturer and one a statesman. Benjamin Rush was the only one of this group who attained an enduring fame from the practice of his profession. He was noted for his statesmanship and patriotism. The latter was attested by the various offices which he held in the National Government. In 1777 he was appointed Surgeon General of the Continental Army, having resigned from Congress to fill this position. His career as a soldier, however, terminated rather abruptly for his criticism of General Washington for his lack of military discipline. He was a member of the convention of Pennsylvania for the adoption of the Federal Constitution, and in 1799 he was appointed treasurer of the United States Mint by President Adams, which position he held until his death.

During his youth he received the best education obtainable. After pursuing his preliminary education under the direction of Rev. Samuel Finley, who later became president of Princeton College, he obtained the degree of bachelor of arts from that institution during his fourteenth year. His medical education was obtained from the University of Edinburgh, supplemented by studies in London. Returning to his native land, at age of 24, he was appointed professor of chemistry in the College of Philadelphia, which was the first medical school established in America. Twenty years later he became professor of theory and practice of medicine in this institution which, in 1791, together with the University of the State of Pennsylvania, were united to form the University of Pennsylvania, at which time he was appointed professor of the institutes of medicine and clinical medicine.

Early in his practice he became an advocate of the system of depletion, exemplified in bleeding and the use of cathartics. This principle was applied for the cure of such diverse diseases as consumption, dropsy, hydrocephalus, appoplexy, gout and insanity. His esteem for the use of calomel gave it the designation, "the Sampson of the materia medica." The opponents to his system accepted this description because, they said, "it has slain its thousands." As has been the case with most advocates of new medical theories, he was engaged in many stormy controversies over his depletive theory. This was most strikingly exemplified in the yellow fever epidemic of 1793 which, during the four months following July, caused four thousand deaths in Philadelphia. At one time there were but three physicians of the city able to attend patients. Treatment of the disease was most discouraging, but Rush, by the administration of calomel and jalap, produced a most striking reduction in mortality. The use of this drug, however, excited such hostility not only among his brother physicians but among the general public, that he was even assailed as a murderer and threatened with prosecution and expulsion from the city.

His intelligence as a student, lecturer and practitioner was most noticeable. His published volumes included not only medical works, but literary, moral and philosophic essays. He advocated the improvement of every moment of time. He advised his students to lay every person they encountered under a contribution for facts on physical subjects. He consistently used a notebook, consisting of two parts, in one of which he entered facts as they occurred and in the other ideas or observation as they arose in his mind or were suggested by others.

The diversity of his mental capacity is indicated by the various enterprises in which he was concerned. He was one of the founders of the Philadelphia dispensary, the first established in America. He was one of the founders of Frank and Marshall College, as well as Dickinson College. He was a founder of the Philadelphia Bible Society, and for many years the vice-president of the American Philosophical Society. His most elaborate work in medicine was the "Diseases of the Mind" which lead some to designate him the father of psychiatry in America. He has been credited with being the originator of the modern temperance movement, as indicated by many temperance articles and papers published in the magazines of the days.

Early in life he resolved to abstain from matrimony. "Medicine is my wife; science is my mistress; books are my companions; my studies my grave; there I lie buried, the world forgetting, by the world forgot." Later in life, however, he took to himself a wife of sufficient youth to present him with thirteen children. Evidently his views on matrimony underwent a radical change. In treating of the causes of insanity he says, "Celibacy is a pleasant breakfast, a tolerable diner, but a very bad supper. The supper is not only bad, but, eaten alone, no wonder it sometimes becomes a predisposing cause to madness." A study of the biographies of famous men of the past is most fascinating, combining incidents of personal characteristics and distinguishing traits and also presenting many facts of history. In no manner can a medical man obtain so much inspiration and encouragement for meeting his routine duties and the many trials of a busy medical life as contemplating the lives and deeds of his noted medical predecessors.

MEDICAL KNOWLEDGE FOR THE PUBLIC

During the rise and development of numerous healing cults of recent years, many members of the profession have expressed their views as to the need of publicity concerning scientific facts of medicine to offset the fantastic and senseless propaganda which seems to meet such a ready response in the minds of the public. It is gratifying to read the corroboration and elaboration of these sentiments in the literary magazines. An editorial in *The Independent,* of January 5, entitled "Give Medical Knowledge to Everybody," discusses this matter in a most reasonable and convincing manner. The writer is much disturbed over the recent revelations as to medical crooks and incompetents who have been duly licensed to prey upon the inhabitants of some of the eastern cities. He says there are hundreds of thousands of American families who do their doctoring with patent medicines, and have their surgery attended to by "natural bone setters" or the pretentious twisters, pounders, pokers and punchers with Greek and Latin names. He thinks the people in general believe regular practitioners of medicine form a secret society with trade union rules, who hold the public in awe by talking a language they cannot understand and parading a code of ethics as a sacred mystery which, he believes, in reality exemplifies nothing more than common honesty, propriety and ordinary decency. It is recommmended that medical men must get rid of their mystery business and show the public what they do and how they do it, explaining wherein lies the difference between scientific medicine and quackery. The eagerness of the masses to obtain knowledge in evening schools and university extension courses is cited to indicate what might be accomplished by the proper presentation of scientific facts. It is suggested that the medical schools should lead and organize a propaganda of information, both for the purpose of saving life as well as for their own self-interest.

These comments and suggestions, coming from a layman, are worthy of serious consideration. The difficulty with a group of ordinary physicians or medical societies in disseminating this sort of information lies in the fact that they are neither organized nor equipped to remain steadily on the job until the facts or contentions are impressed upon the minds of large bodies of people. Here, however, is a distinct field in which real results for the benefit of the public might me obtained thru the agency of an established organization for propogating information, such as exists in university extension courses. The officials of these courses for public enlightenment might well consider systematic efforts for imparting to the public fundamental facts concerning normal and pathologic conditions of the human body, and scientific facts which have been discovered relative to diseases and their prevention. It is not suggested that they mention or offer any method of treating disease. What the public needs are the basic facts relative to conditions of disease which have been proven and demonstrated and which can be comprehended by the average individual when properly presented. Ordinary people would be likely to give more eager attention and credence to such facts presented by impartial educators than when offered by practitioners of medicine who might be charged with bias and the exhibition of personal interest. This is a matter worthy of earnest and serious contemplation, not only by the medical profession but by all interested in suppression of disease and prolongation of life.

AN EXAMPLE OF PROFESSIONAL SERVICE

The recent visit to Seattle of Dr. Dean Lewis, the well known Chicago surgeon, was a notable event and the profession of the Northwest and Seattle in particular are under obligations to the Seattle Surgical Society for making such a visit a reality. He conducted two surgical clinics of exceptional merit, gave several addresses, one of which was open to the general profession, in all of which Dr. Lewis' ability as a forceful teacher and able clinician was superbly sustained. At the dinner, given in his honor at the Seattle Golf Club, as great a success socially as other phases of his visit had been scientifically, one of the speakers emphasized the inspiring example that Dr. Lewis offered the local profession of unselfish service in making the sacrifice of time, strength and finance to travel more than half across the continent in order to share with his colleagues the knowledge of surgical problems that is his.

With such an example before us it is not amiss to note that such a fine spirit has been the glory and inspiration of the great leaders of medicine for more than a century. Notable examples of such types will instantly suggest the names of Harvey, Jenner, Lister, Koch, Pasteur, Gross, Flint, Senn, Lazear, Walter Reed, Murphy, Moynihan, the Mayos and others like them who have never counted personal sacrifice, when they felt that duty demanded service to their profession. Physicians, who feel they are deserving of a distinguished service medal because they occasionally go to a county or state medical meeting, might well remember these men and apply to their own professional lives the lessons they teach. What each man or woman in medicine is as regards professional knowledge is largely a result of the willingness of the men of a previous professional generation to serve as teachers, essayists, and authors; men who had an altruistic purpose to fit those who were to follow in their professional footsteps for the great opportunities for service to humanity that come to many physicians. Is it too much to hope that the example of Dr. Lewis may stimulate us on to do what we can to help the men and women who are to take our places? And it is not superfluous to suggest, what is a matter of common observation, that the successful practitioner in every community will be found to be, with but few exceptions, the man who gives most generously of his time and talent for the benefit of his profession and the solving of those civic problems for which his scientific training peculiarly qualifies him.

THE TRUE FUNCTION OF THE COUNTY MEDICAL SOCIETY

At the present time there is considerable agitation over the number of medical meetings which one is privileged to attend and the amount of time which they consume. This is well founded, if one takes advantage of them all, but may we not have a wrong impression of our many different medical meetings, clubs, staff-meetings and special societies. It seems that many of them, like our social or commercial clubs, may have been started because medical men did not all have an opportunity to take part in the county society and, wishing to be privileged to discuss or present papers more frequently, organized special clubs for those who were similarly interested. Later other groups were organized and so on. Then came the hospital staffs with their meetings, so that today it is true, if one is fortunate enough to be privileged to attend all or nearly all of these meetings, he will find himself a very busy man. But out of fairness to the less fortunate ones, should the three or four meetings a month, which they are privileged to attend, be done away with? One would decidedly say no.

First of all let us place our county society where it belongs. It is the standard for all medical men and women in this country, for only thru it may they belong to the state association or the American Medical Association, as well as to any of the several clubs, or organizations which we are discussing. Also it is the medium for medical thought for all and only thru it may all the physicians be reached for purposes of medical organization or the maintenance of ethical principles. As its standard is lowered, so will we lower the standard of admittance to all medical societies. Hence, the necessity of seeing that the county society is not weakened by the organization of other medical clubs; nor should we attempt to prevent the organization of such by splitting up the county society into smaller bodies.

Every medical man, regardless of his specialty, should be interested in good medical and surgical papers. Most of these on special subjects could be given under the heading of medicine and surgery, especially those of importance to the general practitioner. It is very important that he should be kept in close touch with the work of the specialist and he has a right to feel that the county society will do this for him. It would seem, therefore, that the many different organizations might be a great aid to the county society in place of attempting to supplant it. We know that a small group may spend more time on a particular subject, entering more minutely into its discussion, and in this way prepare the way to present a more thoro paper to the larger body at the county society meetings, for this is the one large organization operating thruout the year and, as it is the avenue for entrance to all other organizations, it should be made also the principal avenue of instruction to the general medical profession in its community. This can be done by carefully preparing the papers for its meetings and having certain of the discussers selected in advance who will be prepared to talk. In this way the meetings may be made so instructive that, regardless of many other organizations, the physicians of the county will always welcome an opportunity of attending the county society because they gain something by doing so.

JOHN W. HUNT

The death of Dr. Hunt has removed one who for many years has been closely associated with the management of NORTHWEST MEDICINE as counselor and advisor. His value was realized in the consideration of many problems that arose from time to time. His qualifications as a surgeon and relations to the medical profession have been witnessed by others at different places and occasions. We wish here to offer our tribute to his lovable qualities as a man, his willing spirit and readiness to assist when called upon to aid in the accomplishment of any worthy endeavor. The editor has enjoyed and valued his acquaintance and friendship from the time he began practice in Seattle. His loss will be a real one. His memory will be cherished with the recollection of a man of worthy qualities, appreciated by a large circle of friends.

NEW ADVERTISEMENTS

Attention is called to the following new advertisements appearing in this issue: Shaw Supply Co. (page 19) presents electric and x-ray equipment. Agfa X-ray Films (page 23) are also supplied by Shaw Supply Co. Los Encinas (page 16), Pasadena, Calif., is an institution for nervous and other diseases. Knox Gelatine Co. (page 9) offers a food for malnutrition.

MEDICAL NOTES

OREGON

Special Parking Permit for Physicians. Last month a petition, signed by more than a hundred physicians and surgeons of Portland, was presented to the city council, requesting exemption from parking ordinances previously passed, so that they might park cars on any street without time limit, provided a certificate of necessity was attached to their cars. Hitherto the city fathers have declined to grant such special privileges.

Official Opening of Hospital. The Shriners Hospital, of Portland, was officially opened Jan. 15, when five boys and five girls were admitted as patients. No formal ceremony accompanied this opening, altho the board of governors were present for the occasion.

Narrow Escape. Last month Dr. E. A. Howard, of Corvallis, had a narrow escape from death. While crossing a railroad track at night a train, backing into a switch, struck his car, entirely demolishing it and causing the doctor severe injuries.

Dr. F. A. Kiehle, of Portland, returned home January 20 after a year's study in London, Vienna and Paris.

Dr. A. H. Johnston, who has practiced for several years at Arlington, has located for practice at Heppner.

Dr. Harry Bouvy, of La Grande, has sailed for Europe where he will spend the year in study, chiefly in Vienna.

Dr. C. C. Chick, of Heppner, moved last month to The Dalles, where he will continue to practice.

WASHINGTON

More Physicians Admitted to Practice. At the January session of the examining board, at Olympia, fifty-two physicians were admitted to practice. All of these were admitted by reciprocity excepting nine. Those admitted by examination were as follows: A. V. Golitzin, C. M. Harger, N. G. Pershin and A. C. Silverberg, Seattle; F. K. Herpel, Spokane; J. C. Hay, Victoria; W. M. Kemp, Vancouver; L. R. Lightfoot, London, Ont.; D. W. Davis, Coleman, Alta.

Hygiene of Maternity and Infancy. A correspondence course in hygiene of maternity and infancy has been inaugurated by the Child Hygiene division of the State Department of Health, in co-operation with the Children's Bureau of the United States Department of Labor. According to Dr. Turner, of the State department of health, Washington has a comparatively high death rate among infants. All women of the state are eligible for this course, who will be given instruction without cost.

Physicians and Dentists Building Started. Work was begun last month on the medical and dental building in Seattle, on a site adjacent to Frederick & Nelson, the leading dry goods and department store of the city. It will be one of the largest special buildings of this kind in the United States. The cost of the building and site is given as $2,000,000. It will be eighteen stories in height, on a lot 120 by 126 feet. It includes the accommodations for parking cars and represents all the latest improvements available for office buildings.

Assumes Hospital Control. Dr. L. M. Wilbor, chief medical officer of the United States Veterans' hospital for mental patients at American Lake, last month took charge of all the buildings comprising the institutions. This terminates the period of construction and establishes this as one of the big permanent hospitals under the Veterans' Bureau. When completed the hospital will be operated by one hundred and eighty employees.

Hospital for Indians. Government officials have been recently investigating the establishment of a hospital for the Yakima Indians at Fort Simcoe, near Toppenish, which would involve the appointment of a resident physician and full hospital equipment with maintenance cost of from $12,000 to $15,000. It is stated that the proposed enterprise will depend upon what the Indians themselves wish.

Hospital Renovated. In the City of Prosser the old Murphy hospital has recently been renovated and opened under the care of graduate nurses. The absence of a modern surgery, however, has been felt. The Community Club last month appropriated funds for the establishment of such a surgery.

Fire in Sanitarium. The Bay View Sanitarium, of Aberdeen, was last month injured by a fire to the extent of $2500. The roof was destroyed and the three floors sustained much damage.

Improvements to Hospital. Improvements are being made in the Pierce County hospital, at Tacoma, whereby porches, formerly used for treatment of tuberculosis patients, will be enclosed to make room for fourteen more beds.

Detention Hospital Urged. Pressure has recently been brought on the Mayor of Tacoma for the reorganization of the detention hospital for women afflicted with venereal disease which existed during the war period. This measure has been especially urged by the military authorities at Camp Lewis. It is desired to protect the soldiers from infection.

Marine Hospital Planned. The United States public health service presents a $9,000,000 building program for 1924, which includes $1,000,000, for a Marine Hospital in Seattle. Preliminary plans provide for a steel and concrete building with accommodations for one hundred patients.

Measles Epidemic. During the past month the epidemic of measles has prevailed in most of the cities. From Tacoma, Yakima, Spokane, Seattle and other localities hundreds of cases have been reported. Some school rooms have been almost empty of pupils and in some localities the schools have been temporarily closed in consequence.

New Health Officer in Walla Walla. Dr. J. P. Kane, formerly health officer of Tacoma, has been appointed health officer for Walla Walla city and county. This appointment has been brought about thru the co-operation of the Rockefeller Foundation, which contributes $2500 for the employment of a full time health officer. A similar plan is under contemplation for a health unit for the city of Wenatchee and Chelan county.

Reappointed Health Officer. Dr. Ralph Hendricks, of Spokane, was last month reappointed health officer of that city at a meeting of the city commission.

President of School Board. Dr. C. W. Sharples, of Seattle, who has served the past year as a member of the Seattle school board, has been elected to the presidency of the board.

Washington Public Health Nursing Association held its annual meeting at Everett, Jan. 5. Addresses were made by nurses from different cities of the state as well as several representatives from the East.

Will Visit Ireland. Dr. P. M. English, of Yakima, has gone to Ireland to visit his old home. About a year will be spent in study before his return.

Dr. Leo Ensch, who has practiced for several years at Sedro-Woolley, has moved to Anacortes, where he will be located for the future.

Dr. W. M. O'Shea, who has practiced for a number of years at Spokane, has moved to Seattle where he will be located for the future.

Dr. C. E. McKinnis, of Blaine, has gone East for study and after his return will locate at Bellingham.

Dr. G. W. Weddell, who has practiced for some years in Seattle, has located for practice at Blaine.

IDAHO

Death and Diseases Decline. Dr. F. W. Allman, of Boise, director of the bureau of child hygiene, has compiled health statistics of the state. These indicate the deaths among children under five years of age have decreased 20 per cent since 1921. There has also been a decrease of 10 per cent in still-births. There was also a decrease in deaths from respiratory and intestinal diseases.

Dr. F. M. Ray, of Pocatello, left last month for Europe, where he will spend a year in study, chiefly in Vienna.

Dr. L. F. Muller, of Pocatello, has returned home for practice after a period of study in Paris and Edinburgh.

Dr. C. P. Groom, formerly of Rupert, is located for practice in Pocatello.

MONTANA

Compulsory Vaccination. Last month the question whether the state board of health could compel the vaccination of school children was thrashed out in the Silver Bow county court in Butte. The board had established the rule of excluding children who had not been protected by successful vaccination. The court decision was adverse to the school board. Appeal to the supreme court has been under consideration.

The Montana Academy of Eye and Ear Surgeons held its semiannual meeting at Anaconda, January 28. About twenty-five members were in attendance. Papers were read by Dr. Charles Coulter of Great Falls, and M. C. Pfunder, of Miles City.

New Health Officer. Dr. W. W. Andrus, of Miles City, was last month appointed health officer to succeed Dr. F. S. Gray resigned.

OBITUARIES

Dr. J. Tuttle, of Astoria, Ore., died Dec. 14, after an illness of a few days. He was born in Nottingham, N. H., in 1841. He lived in Astoria and vicinity for nearly sixty years. Beside the practice of medicine he had a drug store for many years. In early days he engaged in the lumber business as well as steam navigation. He was express agent, postmaster and telegraph operator. He was treasurer of Coos County in 1874 to 1876. He served a term as state senator from Clatsop County. He had a very wide acquaintance and many friends.

Dr. W. F. Todd died in La Junta, Colo., Dec. 27, at the age of 34. He was born in Clackamas County, Ore. For several years he was in business in Portland and for four years he served in the United States army. He graduated from an eastern college. For the last two years he has been on the staff of the Santa Fe Hospital at La Junta.

Dr. John W. Hunt, of Seattle, Wash., died Jan. 2. He was born at Olathe, Kan., in 1883. After attending high school in his native town he graduated from the University of Kansas. He obtained his medical degree from Yale University, in 1904. He came directly to Seattle, where he has practiced since that time. During the war he was major in the medical corps, serving in the Field Hospital of the 91sh Division. He was a man of marked ability and was highly esteemed at the time of his death, having a large circle of friends and contemporaries.

Dr. Charles W. Southworth, of Salem, Ore., died Jan. 17, after a week's illness with pneumonia. He was born at North Collins, N. Y., in 1870. He graduated from Forestville, N. Y., academy and Phillips Extension Academy. He graduated from University of Michigan in 1893 and then taught school for two years. He received his medical degree from University of Buffalo in 1898. He practiced at Forestville till 1909, when he came west and located at Eugene. About four years ago he moved to Salem where he had been one of the prominent physicians, He took a leading part in civic affairs, bein gactive in a number of clubs and organizations.

REPORTS OF SOCIETY MEETINGS

WASHINGTON

KING COUNTY MEDICAL SOCIETY

Pres., C. E. Hagyard; Sec'y, R. F. Hain

The annual meeting of King County Medical Society, Seattle, Wash., was postponed from Jan. 7 to Jan. 14, when the regular business of the meeting was transacted. Minutes of the previous meeting were read and approved.

The report of the Secretary-Treasurer was read and accepted.

The report of the Program Committee was read by Dr. C. E. Watts and properly accepted.

The report of the Membership Committee, as made by Dr. Frederick Parker showing an increase over 1922, was duly approved.

Dr. H. J. Davidson, chairman of the Legislation Committee, made a verbal report, stating there was nothing of importance that had taken place during the present year.

The University Extension Committee report was made by Dr. A. O. Loe and met the hearty approval of the society.

Mr. Robinson read the report of the Credit Bureau, of which Dr. E. A. Rickards is chairman, which was accepted and placed on file.

Dr. E. H. Smith read the report concerning the Industrial Service Bureau of the society, after which there was discussion, taken part in by Drs. H. J. Davidson, F. L. Horsfall and Mr. Robinson, whereupon the motion made by Dr. Smith, recommending that the newly appointed Committee for the Industrial Service Bureau of the King County Medical Society be authorized to deduct a pro-rata amount from each bill rendered to the Bureau, so as to accumulate the sum of $2,500.00 during the coming year to be used as a sinking fund for the Industrial Service Bureau in the event that the medical society might voluntarily discontinue this service, was regularly seconded by Dr. H. J. Davidson and passed.

The report of the Central Standardization Committee was read by Dr. W. F. Hoffman.

Dr. Walter Kelton gave a verbal report concerning the activity of the Press and Public Information Committee.

The report of the Entertainment Committee, made by Dr. E. Weldon Young after the banquet of 1923, was accepted as the report for the year 1923, inasmuch as there was no further entertaining by the society.

Applications for membership of Drs. George Mohr and Duncan Mac T. Fuller were read.

The election of officers for the ensuing year was held, the following being selected: President, Dr. F. T. Maxson; Vice-President, Dr. G. A. Dowling; Secretary-Treasurer, Dr. J. S. Lundy; Trustees, Drs. F. S. Bourns and A. T. Wanamaker; Delegates to the Washington State Medical Association, Drs. C. E. Hagyard, C. Plummer, E. W. Young, H. D. Dudley, D. H. Palmer, D. V. Trueblood, C. E. Watts and F. M. Carroll.

SNOHOMISH COUNTY MEDICAL SOCIETY

Pres., C. L. Hoeffler; Sec'y, John F. Beatty

The monthly meeting of Snohomish County Medical Society was held at Everett, Wash., Jan. 8, 1924.

The following officers were elected for the ensuing year: President, C. L. Hoeffler, Everett; First Vice-President, J. A. Durrant, Snohomish; Second Vice-President, B. E. Washburn, Everett; Third Vice-President, C. G. Morehouse, Everett; Secretary-Treasurer, J. F. Beatty, Everett.

The paper of the evening was read by Dr. A. P. Duryee, on "Uterosacral Ligaments." He thoroly covered the literature on the subject, showing the technic of many of the investigators in this field. He also showed several new instruments which have proven useful in this operation. The paper was followed by general discussion.

Reports were read by Dr. Howard on "Submucous Fibroids." Dr. Hoeffler reported "Hemorrhage in Ten-year Old Girl," following tonsillectomy and adenoidectomy. Hemorrhage come from site of adenoids.

SPOKANE COUNTY MEDICAL SOCIETY

Pres., C. M. Doland; Sec'y. G. H. Anderson

The annual meeting of the Spokane County Medical Society was held on Jan. 10, 1924, at 8 o'clock, in the assembly room of the Old National Bank Building, Spokane, Wash. The minutes of the previous meeting were read and approved.

The following officers were elected for the ensuing year: President, Dr. C. E. Butts; Vice-President, Dr. G. A. Downs; Secretary, Dr. G. H. Anderson; Treasurer Dr. E. S. Jennings; Delegates to State Association Meeting, Drs. Hamblen and Price for two-year terms, Drs. Langworthy and Price for one-year term.

Drs. Hamblen, Reid, Langworthy, Price and A. C. Johnson were nominated for delegates to the state convention. As a result of the balloting Drs. Hamblen, Reid, Langworthy and Price were elected. Drs. Hamblen and Price, receiving the most ballots, were given the two-year term; Drs. Langworthy and Price the one-year term.

Dr. C. B. Ward's resignation from the board of censors was accepted. Nominations to fill the two vacancies on the board of censors were Drs. McCornack, Doland, D. H. Lewis, John O'Shea and Mowery. It was decided that the nominee receiving the most votes should be elected for three years, the one receiving the least to be elected to fill the remaining portion of Dr. Ward's term. As a result of the balloting Dr. Doland received the most votes and was given the three-year term and Dr. McCornack the one-year term.

Drs. Lewis, O'Shea and Mowery were elected to the executive committee.

Drs. A. Fischer and Peter Reid were appointed to audit the books of the secretary and treasurer.

A motion was made by Dr. Epplen, seconded by Dr. Marshall, that the secretary's salary be paid. Carried.

The regular monthly clinical meeting of the Society was held at St. Luke's Hospital, Jan. 24, at 8:00 p. m.

PROGRAM

Dr. Eikenbary presented (1) a case of tuberculosis of the astragulus, (2) A case of nonunion of fracture of the tibia which was treated by bone grafting. This failing to cause union, a second operation with similar bone graft brought about firm union, in spite of the fact that a low grade infection developed after the operation. (3) A case of compound comminuted fracture of the foot, complicated by gas bacillus infection, necessitating amputation below the knee. This case was presented chiefly to show a means of keeping the skin flaps from retracting, when it is necessary to keep the wound open.

Dr. Walker presented a case of thrombosis of the right iliac vein which had resulted from an embolus from a mural thrombus of the left auricle. Gangrene of the leg resulted.

Dr. Matthews read three case reports. (1) A case of uterine and extrauterine pregnancy; with the removal of the extrauterine pregnancy, the woman continuing along with the uterine pregnancy. (2) A case of subacute ileitis. (3) A case of removal of tumor from the abdomen which proved to be due to a sponge left in the abdomen at a previous operation.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

Pres., Frederick Adams; Sec., J. H. Harter

The annual banquet of the Puget Sound Academy of Ophthalmology and Oto-Laryngology was held Jan. 22, 1924, at the University Club, at 7 p. m., Seattle, Wash.

It was voted that the program discussed at the last meeting be adopted for the following year, namely to have a series of lectures by competent specialists.

The following officers were elected for the ensuing year: J. T. Dowling, Seattle, president; C. L. Hoeffler, Everett, first vice-president; W. H. Hoffman, Seattle, second vice-president; M. J. Morriss, Seattle, secretary-treasurer.

OREGON

PORTLAND CITY AND COUNTY SOCIETY

Pres., C. S. White, Sec'y, K. C. Moran

Portland City and County Medical Society held a meeting Jan. 16, in Portland, Ore. The program consisted of a Symposium on Insulin. The papers read were as follows:

"Our Procedure in the Treatment of Diabetes with Insulin," Dr. Leo Ricen; "The Relation of the Optimum Diet to the Use of Insulin," Dr. Blair Holcomb; "The Practical Side of Insulin," Dr. Harold Dean; "Acidosis and Insulin," Dr. Banner Brooks; "Insulin and Diabetes Complicating Pregnancy," Dr. Raymond Watkins.

Dr. Ross, of Eugene, opened the discussion of these papers. Dr. J. E. Else spoke of insulin in relation of surgery of diabetic patients.

The Place of the Low Cervical Cesarean Section. The technic of the operation described by John Cooke Hirst and W. W. Van Dolsen, Philadelphia (Journal A.M.A., Jan. 12, 1924), is essentially that of Beck, with a few minor modifications that experience with the operation has suggested. The operation is particularly devised to apply to those cases in which the classical cesarean section would be unduly dangerous. It affords a safe method of delivery in cases in which the classical operation would only too often be followed by peritonitis. It is more difficult than the classical operation; but this should be no bar to an operator with any claims to enter the abdomen at all. The time needed for the operation will be about double that of the classical operation, but ordinarily from thirty-five to forty minutes is all that is needed, in the absence of extraordinary developments. It is not any easy or advisable operation unless the patient has been in labor, owing to the small space available in the lower uterine segment, previous to the time this has been stretched in the first stage of labor. But in this type of patient there is no need for the operation at all.

NEW AND NONOFFICIAL REMEDIES

The Council on Pharmacy and Chemistry of the A. M. A. has issued the following report of recent date:

National radium emanator. A portable appliance for activating water with emanation; the emanation is emitted from a solution of radium chloride, barium chloride and sodium chloride. The appliance is claimed to produce 40 microcuries (150,000 Mache units) of radium emanation to 1,000 Cc. of water daily. The actions, uses and dosage of radium are discussed in New and Nonofficial Remedies, 1923, p. 255. National Radium Products Co., New York. (Jour. A. M. A., December 8, 1923, p. 1953.)

Iodostarine-Roche. Diiodotariric acid. An iodine addition product of tariric acid, derived from the fruit of a species of Picramnia. Iodostarine-Roche contains 47.5 per cent of iodine. It acts in the tissues similarly to inorganic iodides. It is not broken up in the stomach, but a portion of the iodine is split off when it enters the intestine. The undecomposed portion is readily absorbed and, as in the case of other fats, is largely deposited in the tissues where it is slowly split up. The action of iodostarine-Roche is exerted more slowly than that of the inorganic iodides. Iodostarine-Roche is supplied by the form of tablets iodostarine-Roche 0.25 Gm., and as chocolate tablets iodostarine-Roche containing iodostarine-Roche equivalent to iodine 0.01 Gm. Hoffman-LaRoche Chemical Works, New York. (Jour. A. M. A., December 15, 1923, p. 2032.)

Tetanus antitoxin for human use (Cutter). Tetanus antitoxin, concentrated (see New and Nonofficial Remedies, 1923, p. 284), marketed in syringes containing 1,500 and 5,000 units each. Cutter Laboratory, Berkeley, Calif.

Diphtheria toxin-antitoxin mixture (Cutter). Diphtheria toxin antitoxin mixture (see New and Nonofficial Remedies, 1923, p. 284), each Cc. representing 3 L+ doses of diphtheria toxin neutralized with sufficient antitoxin to conform to the toxicity requirements of the U. S. Public Health Service. It is marketed in vials containing, respectively 1 Cc. and 50 Cc., and in syringes containing one immunizing treatment. Cutter Laboratory, Berkeley, Calif.

Antianthrax serum for human use (Cutter). An antianthrax serum (see New and Nonofficial Remedies, 1923, p. 287), marketed in double-ended vials containing 50 Cc. for intravenous injection. Cutter Laboratory, Berkeley, Calif.

Rabies vaccine—Pasteur (Cutter). An antirabic vaccine (see New and Nonofficial Remedies, 1923, p. 294), prepared according to the method of the Hygienic Laboratory of the U. S. Public Health Service. The emulsion from the cord is shipped daily and is diluted at the time of injection. The treatment consists of 21 daily injections. Cutter Laboratory, Berkeley, Calif.

Diphtheria toxin for the Schick test—Cutter. A diphtheria immunity test (see New and Nonofficial Remedies, 1923, p. 323), marketed in packages of two vials, one containing diphtheria toxin and the other physiologic solution of sodium chloride for dilution. Cutter Laboratory, Berkeley, Calif.

Capsules carbon tetrachloride (human use). P. D. and Co. A brand of carbontetrachloride—N. N. R. It is marketed in capsules containing 20 minims. Parke, Davis and Co., Detroit.

Elixir of Veronal. Each fluid drachm contains veronal (see New and Nonofficial Remedies, 1923, p. 63) 2 grains in a menstrum containing alcohol 33.5 per cent. Winthrop Chemical Co., New York.

Diphtheria toxin-antitoxin mixture (new formula). Squibb. Diphtheria toxin-antitoxin mixture (see New and Nonofficial Remedies, 1923, p. 284) containing in each cubic centimeter 0.1 L+ dose of diphtheria toxin neutralized with the required amount of diphtheria antitoxin. Marketed in packages of three vials, each containing 1 Cc.; and in vials containing respectively, 10 Cc. and 20 Cc. of the mixture. E. R. Squibb and Sons, New York. (Jour. A. M. A., December 22, 1923, p. 2115).

Cutter Laboratory.
Antianthrax Serum for Human Use—Cutter.
Diphtheria Toxin-Antitoxin Mixture—Cutter.
Diphtheria Toxin for the Schick Test—Cutter.
Rabies Vaccine—Pasteur (Cutter).
Tetanus Antitoxin for Human Use (Concentrated) Cutter.
E. R. Squibbs and Sons.
Diphtheria Toxin-Antitoxin, 0.1L+.
Winthrop Chemical Company.
Elixir of Veronal.

PROPAGANDA FOR REFORM

Liquid Petrolatum as a Laxative. Liquid petrolatum is indigestible. It is not absorbed, and therefore, cannot produce poisoning. In ordinary quantities the administration of liquid petrolatum does not seriously impair the alimentary efficiency. Like all laxatives used in very large quantities, liquid petrolatum may diminsh the degree of utilization of food by promoting evacuation before the functions of digestion and absorption can be entirely completed. Liquid petrolatum may produce gastric distress and, therefore, should be taken in a way to interfere the least with gastric digestion by administration before bedtime or an hour before meals. In reporting on a proprietary brand of liquid petrolatum widely exploited to the public, the Council of Pharmacy and Chemistry warned that constipation should be treated by dietary and hygienic means, as evacuants are but temporary measures. It further cautioned that liquid petrolatum is medicinal: it modifies greatly the intestinal flora; it acts as a lubricant and emollient; it modifies the absorptive powers of the intestinal mucous membrane; it is capable of influencing the digestion of fats; and, in short, liquid petrolatum is a drug, the indiscriminate and excessive use of which should not be encouraged. (Jour. A. M. A., December 1, 1923, p. 1896).

Spahlinger Treatment for Tuberculosis. Spahlinger is a resident of Geneva who received medical training but took his degree in law. Later he abandoned law for research work. The Spahlinger treatment makes use of vaccine and serum therapy. The theories from which the treatment is evolved is that the tubercle bacillus emits different toxins under varying conditions of temperature, environment, etc. Many of these are claimed to be isolated as either exotoxins or endotoxins. The vaccines—of which there are said to be about twenty—are used for prophylaxis for treatment of the milder cases of tuberculosis and for the production of the various serums used in the treatment of the more sever cases. It has been reported that the British ministry of health is prepared to encourage the experimental trial of the Spahlinger preparations under scientific supervision. The British Red Cross has appropriated money to enable Spahlinger to work on a larger scale in the production of his preparations. The reports in regard to the efficacy of the preparations which have appeared in Brtish medical journals are conflicting, and the Red Cross organization has made it clear that the products are in the experimental stage. (Jour. A. M. A., December 1, 1923, p. 1896).

The Galvano Method for Goiter. In the cheap and not too particular rural weeklies, advertisements have appeared for the "Galvano Necklace" said to be "the latest discovery for the relief or cure of goiter by mild electrical treatment." The device is advertised by the Cosmas Pharmacal Co., Watertown, Wis. The advertising for this device stresses the fact that the U. S. Patent Office has granted a patent on it. The public does not know, of course, that the U. S. Patent Office has granted patents on many pieces of medical pseudoscience. According to the patent specifications, the Galvano Necklace consists of beads made of glass, or other insulating material, between which are place, alternately, zinc and copper disks. Through the disk and beads run a metallic wire. The alleged purpose of the invention is that of "generating galvanic currents in contact with the skin in the presence of iodid and calcium chlorid." In use, an oitment containing mercurous iodid and calcium chlorid is applied to the skin of the neck, and the necklace is hung so that the zinc and copper disks will come in contact with the annointed skin. That this device has decided value in the treatment of goiter in unthinkable. Young women with physiologic enlargements of the thyroid will doubtless continue to purchase the devise and as the enlargement disappears, as it normally does, will furnish testimonials for the promotion of the device. (Jour. A. M. A., December 8, 1923, p. 1974.)

Santoperonin. According to Professor Heubner, the history of Santoperonin, claimed to be an ascaridice, does not arouse confidence. The proprietary was placed on the German market before satisfying the requirements that should govern the introduction of new medicants. Its composition has varied; the exploiter has maintained an air of secrecy concerning the identity. Examination indicated that it was a mixture of copper oxid with organic material which consists essentially of aromatic compounds. There seem to be little clinical evidence to warrant its use. (Jour. A. M. A., December 15, 1923, p. 2055.)

"A" Formula or "The" Formula? When the proprietary evil in the United States was at its worst, a common piece of advertising deceit was that of the fake formula. On its face, such a "formula" was impressive—at least to those who were not chemists. After the American Medical Association created its own chemical laboratory, the Association chemists demonstrated repeatedly the absurdity of the seriocomic chemistry of some of the pharmaceutical manufacturers. It was not long before the crude chemistry and cruder dishonesty of pharmaceutical concerns began to disappear. Yet today there are still a few firms which endeavor to lend plausibility to their wares by resurrecting old methods. The report of the Council on Pharmacy and Chemistry on Gly-So-Iodonate brings out that a formula, both qualitative and quantitative, appears on the label of preparations. The formula is absurd and impossible, and the A. M. A. Chemical Laboratory found that some of the ingredients were not present in the amount claimed. (Jour A. M. A., December 22, 1923, p. 2118.)

Gly-So-Iodonate. The Council on Pharmacy and Chemistry reports that in 1921 consideration of Gly-So-Iodonate was requested. The product, said to be a "chemical germicide-antiseptic" was "owned and controlled exclusively by the Wisconsin Medical Laboratories" which is at the present time claimed to be affiliated with the National Medical Research Laboratories, Milwaukee, Wis. A statement of composition was furnished the Council, which named idoin, potassium, iodid, sodium carbonate, sodium bicarbonate, mercuric chlorid, calcium sulphate and magnesium sulphate as chemicals entering into the product. The method of preparation contained the claim that these substances after solution in water were distilled. The Council considered the information and informed the Wisconsin Medical Laboratories that obviously the formula was an impossible one, since the iodin would react with the alkali iodid and iodate, and the mercuric chlorid would react to form alkali mercuric iodid. Also, while Gly-So-Iodonate was claimed to be a distillate, the solids of the formula evidently could not be distilled with water vapors. Further, the Council held the formula to be needlessly complex and, therefore irrational and the name unacceptable because it was not descriptive of the composition of the product. From recent developments, it is evident that on active selling campaign for Gly-So-Iodonate is being directed toward factories and large commercial concerns by the National Medical Research Laboratories. Also, new products — Iomer-Mensal, Saline-Meramno and Gly-So-Iodonate for their base are marketed.

PUBLIC HEALTH LEAGUES

WASHINGTON

ASSOCIATE MEMBERSHIPS

The purpose of the Public Health League of Washington to include laymen in its membership, that its effort may have broader foundation in the state, has been received favorably not only by physicians, but by hundreds of prominent citizens. Editors of newspapers, lawyers, ministers, mayors, club women, Parent-Teachers' officers and health teachers and leaders have joined. Among those recently affiliated with the League is Dr. Lulu W. Hunt, Head of the Foods and Nutrition Department of the College of Home Economics of Washington State College.

In a letter to the League, Dr. Hunt says- "I am very pleased to join the Public Health League. I am sure that no one could be more interested in this type of work. Here at the State College we have a course in Child Care, which of course stresses the health phases very much. I also teach a course of Health, where again we emphasize all phases of health work. At the present time the College is conducting a course in Spokane, under the Department of College Extension, called Health Problems. It becomes my duty to give about four of these lectures, especially the ones pertaining to nutrition. So that you can see that we at the State College are doing something at least toward the health of the people of this State."

LEAGUE PHARMACY BOARD APPOINTED

The Public Health League has been informed of the appointment of a pharmacy committee of five men who will officiate in the organization as a bureau of pharmacy. This committee will be the means of contact with the Washington State Pharmaceutical Association, being at the same time the Board of Managers of that association. All questions relating to the profession, educational, economic and legislative, will pass thru this committee.

It is believed that this marks another important step in the expansion of the League. The two thousand drug stores in the state offer a fine medium for health propaganda, and the pharmacists are in a position now to give definite cooperation in any educational campaign. The members of the League Pharmacy Bureau are C. C. Norton, Tacoma; F. R. Robertson, Spokane; C. B. Kinne, Seattle; W. F. Sedgley, Seattle; H. S. Elwood, Ellensburg.

THAT INCOME TAX

In the last issue of the **Messenger** a special page of income tax news for professional men was prepared for the League by a prominent accountant. Particular attention is given by the expert in setting forth clearly just what exemptions are allowable. On the issue as to the right of physicians to claim exemptions for expenses incurred in taking postgraduate courses, it is stated that the department has uniformly ruled that such expenses are personal and are, therefore, not deductible."

LEGISLATIVE CANDIDATES TO BE INTERVIEWED

The League has begun its 1924 campaign to interest physicians in the coming primary and election which will determine the personnel of the next Washington legislature. Medical men in the different communities are asked to interview prospective candidates and ascertain their attitude on the issues of health. It is expected that the League office will, in the course of the political campaign, have in its files a complete statement of the position of every legislative candidate in Washington. Those who are opposed to adequate health laws and standards, who are inclined to be unfriendly to legislation that will better protect the public health interest, will be fought.

At the last session of the legislature five physicians of Washington were members. They held the important positions in the health committees in the House and Senate. It is understood that they will stand for renomination. Others, it is reported, expect to file. In addition, several dentists have indicated a purpose to make the race and probably a number of druggists will be in the list when the votes are made. With such definite professional leadership, harmonized by the work of the League, there is reason to believe the next legislature will offer more real constructive health service to the people of Washington than ever before in her legislative history.

Another important officer to choose at the next election is the prosecuting attorney for each county. A good medical practice act or any health legislation is almost futile if the prosecutor is unfriendly to this important task of law enforcement. The war the League is waging against quacks and half-baked cults operating illegally is made difficult, if the right kind of cooperation of the enforcement officials is not obtained. Washington is in need of better professional laws and it will need the highest types of attorneys who will sense the importance of these issues and give every aid in law enforcement.

HOSPITAL STANDARDIZATION

Edited by HERBERT E. COE, M.D.

WHAT IS STANDARDIZATION

Some one should offer a prize for a term to take the place of the word "standardization." That word does not adequately express the idea or the ideal which the American College of Surgeons had in mind, when the movement was instituted. It takes too much time and space ordinarily to say "compliance with the minimum standard," or some such phrase and so we use the words "standardization," "standardized," "standardization committee." But after all the word is not a good one. It sounds like "unionize." It carries the suggestion that there must be a fixed level of work, personnel, equipment, etc. It is, thru that suggestion, like a red rag to a bull in the minds of many good members of the medical profession. And, to carry the simile further, many of these men will no more be pushed or driven than the afore mentioned animal. The result is that there are men who do excellent work, who should be the staunchest advocates of standardization, but who still object and criticise and who may grudgingly comply with the letter of the rule while ignoring the spirit.

Why is this? What is the real fundamental reason? Who is to blame? The idea of standardization is sound and excellent; the type of man mentioned is an honest sincere and competent type. Why do they not get together? There are two excellent reason, one of which we can control and one which we can not.

The later is the individualism and personality of the man. We cannot change that, nor should we wish to. Individualism and personality are valuable assets both personally and to the profession as a whole. The former reason, the one which we can control, is the standardization committee.

Each hospital which is attempting to conform to the minimum standard has such a committee, whether it be called by that name or some similar one. It is the duty of the committee to adopt the principles, which go by the name of "Hospital Standardization." to the conditions which obtain in the hospital and to the men who bring patients to the hospital. It is not the duty of the committee to establish a set of detailed, inflexible rules and attempt the impossible task of forcing the hospital and the attending men to conform to them.

The principles of standardization are broad; necessarily so because they were formulated for use in a great variety of hospitals. The object for which they were formulated is the improvement of hospital conditions in general, and the subsequent better care of the average patient. Note the words "general" and "average." There were and are many hospitals which need no improvement and many patients who need no better care. To such hospitals and such attending men standardization means perhaps only a minor change in records or procedure, to the end that their cases may be put upon a basis of comparison with those of others and thus aid in solving some of the problems which confront the medical profession. In such an institution the standardization committee is fortunate indeed. In the great majority of hospitals, however, the duties of the committee are most difficult and thankless.

The broad general principles of standardization require, (1) hospital equipment of such a character as to permit reasonably accurate diagnosis and efficient treatment; (2) that the men who treat cases shall be reputable members of the medical profession; (3) a reasonably uniform method of recording cases, complete enough to allow of (4) periodic analysis and discussion of cases. Immediately the difficulties of the standardization committee begin and synchronously, if the committee lacks tact and insight, the criticism and opposition begin.

The hospital management objects to the expense of additional equipment and personnel, and there must be careful discrimination between the recommendation of recently devised and unproven apparatus, and that which is actually necessary for the best care of the patients. The attending men are of all kinds, good, bad, and indifferent. The good ones must be shown the value of standardization and their cooperation obtained, the indifferent ones must be assisted and improved, and the bad ones must be eliminated. The records must be adjusted to the needs of the hospital, duplication and multiplicity of pages avoided, and the accurate recording of data made as easy as possible for those who must make the entries. Finally, arrangements must be made for the analysis and discussion of cases at regular meetings of the attending men; for without this the value of records is lost, and the exchange of experience and opinion which makes for advancement of knowledge and better care of patients is seriously hampered.

From this summary, all too brief, we can see some of the difficulties which confront a standardization committee, we can see the type of men who must form these committees, and we can see the reason for the statement above; that the standardization committee is the cause of the antagonism on the part of certain excellent men, to what they consider "standardization."

It is a great mistake to put several of the younger men on the committee just because "they have plenty of time." They may have time all right, but they cannot realize that histories and physical examinations are many years back and a bit hazy in the minds of many of the good attending men, nor can they realize how hard it may be for some of these same able men to put in words the symptoms and signs which reveal at a glance to their experienced eyes the correct diagnosis and course of treatment.

The rules which are necessary for the safety of the patients of certain men are not at all necessary in other cases; and the committee should be able to make elastic regulations which will attain the desired results in several different ways, rather than by fixed rules which allow of no variations. The necessity of certain fixed rules is of course obvious to every one but these should be as few as possible and the indications clear.

Instances of the necessity for tact, consideration and understanding on the part of the standardization committee could be multiplied ad infinitum, but the qualifications are sufficiently clear. The committee must help the attending men, not obstruct them; must encourage individuality, not attempt to reduce initiation to a common level; must remember that standardization sets no upper limit to excellence, but only a minimum standard. Possibly it is too much to expect any group of individuals of the genus homo to combine all of the good qualities enumerated, but the ideal must be kept in view if the good which is contained in the standardization idea is to produce the best results possible.

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BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

The Treatment of Diabetes Mellitus. With Observations Based Upon Three Thouand Cases. By Elliott P. Joslin, M. D., M. A., Clinical Professor of Medicine, Harvard Medical School, Consulting Physician, Boston City Hospital, etc. Third Edition. Enlarged, Revised and Rewritten. Illustrated. 784 pp. $8.00, Lea & Febiger, Philadelphia and London, 1923.

This is the most important work on diabetes in English and, altho the author modestly confines its scope in the titles to treatment, yet it really includes the pathology etiology, prognosis and classification of types, etc. It begins with the history and development of the work that led up to the production of insulin, and its use in treatment. This is wholly new matter and other additions to this edition include sections on pathology, respiratory metabolism, diabetics of twenty years standing, methods of Newburgh and Marsh, modern conceptions of acidosis, and Bailey's unique tables of diabetic and nondiabetic foods.

Joslin notes that the new unit of insulin is stronger, so that five units of the new represent seven of the old. One to five units are given from 15 to 30 minutes before meals and checked up with corresponding urinary examinations. As the diet is increased the insulin must likewise be. The urine should be kept sugar-free. Insulin accomplishes in hours what it has taken days heretofore to secure with diet. Thus, a woman with 5 per cent sugar is freed from it in a day by two hourly administrations and is sent home at night sugar-free. The dangers of omitting insulin suddenly are noted altho this may be done after the passing of acidosis, surgical emergencies and acute infections. Over 80 per cent of patients with diabetes have a mild form and these do not require insulin at all. Diabetes in children is not necessarily severe and some cases are acutally cured. In Toronto the reviewer has known of several cases in which diabetes in children disappeared, following the removal of infected tonsils. Joslin is not inclined to attribute much importance to infections in etiology.

The general rules (or creed) for diabetics are interesting and valuable. Joslin's present method of dietetic management of diabetes is very much modified from Allen's. Many days of starvation are not necessary and a low maintenance diet is preferred with as large amount of carbohydrates as the patient will tolerate. The high fat method is not approved and the author's comments on this are interesting. The sections on complications and sequels of diabetes are quite extensive and will prove of much worth. In speaking of gangrene the writer remarks that "if the feet were kept clean as the face gangrene would seldom occur." The section on diabetics and surgery and infections is impressive. Some of the references are to preinsulin days as to 1915 Mayo clinic statistics, since at present the diabetic is operated on as freely as the nondiabetic, and wlth no greater mortality in suitable cases.

The real curative value of insulin is yet to be proved. Diabetes has been an incurable disease. Insulin has marvelous and immediate remedial and life saving effects but we are usually inclined to overrate new medical discoveries. We must wait long after the time when "the tumult and the shouting dies," and then we may find we are reduced to the state of "an humble and a contrite heart". But Joslin is facile princeps as a clinical teacher on diabetes and no medical man can well treat the disease without the help of his book and the enormous experience gained by a man of his genius with three thousand cases.

WINSLOW

Diseases and Injuries of the Rectum, Anus and Pelvic Colon. By J. Rawson Pennington, M. D., F. A. C. S., Proctologist to the Columbus Hospital, Veterans' Hospital No. 30 and the United States Marine Hospital, etc. 679 Illustrations, with two plates. 933 pp. Cloth $12. P. Blakiston's Son & Co., Philadelphia, 1923.

This volume is distinctive from any similar work extant, in that it has endeavored to completely cover the world's literature on this question. An idea of the extent of literature which the author his included may be gleaned from the fact that over 2,000 different authors are mentioned in the text in connection with diagnosis, treatment and statistics. The presentation of the anatomic relations of this part of the body, given under the designation of the "splanchnosomatic funnell," is original and is extremely instructive. No other work on proctology gives such a wealth of statictics or historical data. Among the illustrations are pictures of many of the men who have been notable for their work on diseases of this part of the body. The book is original and comprehensive in its scope and is worthy of a place in the library of all physicians interested in diseases which it treats.

CROOKALL.

A Treatise on Orthopedic Surgery. By Royal Whitman, M.D., M.R.C.S., F.A.C.S., Surgeon to the Hospital for Ruptured and Crippled, New York City, etc. Seventh Edition, Thoroughly Revised. Illustrated with 877 Engravings. 993 pp. $9.00. Lea & Febiger Philadelphia and New York, 1923.

This new edition presents some minor changes and additions, especially along traumatic lines. There is a noteworthy addition to the treatment of scolioss, namely, the operative method. This phase of the subject was developed largely by Hibbs, and is used only in selected cases with the object of ridding incurable cases of braces by fusion of a number of vertebrae in the primary curve, thus procuring an internal splint. Some matter is added on traumatic and posttraumatic knees, discussing injury to cartilages and cysts of the semilunars. Injuries and rupture of the ligaments of the knee are considered with some very helpful hints as to the treatment of these conditions. There is a discus-

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sion of ruptured tendo Achillis, trench feet, and injury to sesamoid bones of the great toe joint.

The last chapter on military orthopedics has been changed to Collateral Orthopedic Surgery and contains the most radical changes found in the book. It contains much valuable information both for civil and military orthopedic practice. Starting with a classification of work done by the military orthopedic surgeon, he gives a complete list of physical requirements, from orthopedic points of view, for a recruit desiring admission into the army. This is followed by a schedule of disability rating of the injured soldier which might apply to industrial surgery as well. He takes up the problem of fractures from first aid to convalescence. Amputations are then discussed with an interesting description of kineplastic methods. Then follows a discussion of nerve surgery and sequelae.

JEFFERY

Local Anaesthesia Methods and Results in Abdominal Surgery. By Prof. Dr. Hans Finsterer, Surgeon-in Chief, Vienna Hospital of the Brothers of Charity. With 42 illustrations. 349 pp. Authorized English Version by Joseph P. T. Burke, M. D., Sc. D., Ll. D., Attending Surgeon, Buffalo Hospital of the Sisters of Charity. Rebman Co., New York. 1923.

The author has given a comprehensive and very readable review of the various methods of local anesthesia for abdominal surgery. There are many practical points in technic brought out. He prefers freshly prepared novocain solutions, usually 0.5 per cent in normal salt solution, to which is added 0.005 gm. adrenalin or about 18 drops 1-1000 soultion of adrenalin to 100 cc. No solutions which have turned red should be used. Vessels and syringes used must not be boiled in soda solution but in distilled water. The addition of 0.5 gm. quinine sulphate to 11 c.c. of 0.5 per cent novocain solution increases and prolongs the anesthetic action. This should not be used in splanchnic anesthesia on account of the probabity of gastrointestinal atony.

The amount of novocain and the concentration should always be determined by the constitution of the patient. As a rule 150-200 c.c. of a 0.5 per cent solution is sufficient for major abdominal operations. Every effort should be made to avoid intravenous introduction of a large quantity of novocain. This is best avoided by making it a rule never to inject with a motionless needle. If a vein is then struck only a few drops will be injected and no harm will be done. This description of the fan-shaped and rhomboidal infiltration of the abdominal wall and the injection of the anterior peritoneum after it has been opened is very explicit and must give satisfactory anesthesia. The use of the splanchnic anesthesia of Braun as described is apparently very simple and satisfactory. All the points of technic should be rigidly followed or disaster might easily occur. Anyone interested in abdominal surgery will gain something from reading of this excellent book.

MILLINGTON.

The Pharmacist's Botany. By George B. Rigg, Ph.D. Associate Professor of Botany, University of Washington. 303 pp. The Macmillan Company, New York, 1924.

This volume is of interest on account of the author being on the faculty of the University of Washington. The application of the volume to the medical profession lies in the fact, as stated by the author, that botany has long been associated with pharmacy because so many of the substances used in medicine are derived from plants, approximately three hundred official drugs being obtained from this source. The foundation for modern botany was laid by the herbalists of the sixteenth century, who were mostly physicians of the various European countries. The volume is divided into three parts: seed plants, spore plants are described in detail and their physiologic The organisms and texture of the various parts of plants are described in detail and their physiologic processes are reviewed. Much pace is given to seed plants. Among the thallus plants, which are differentiated into root, stem and leaf, are a number commonly employed in medicine, among them being agar-agar, obtained from several specie of red algae. Among the moss plants of special interest is sphagnum, which is found along the northwest coast from Oregon to Alaska. Its value as a surgical dressing is due to the fact that its cellular structure is such that it absorbs large quantities of liquids. The book is of value to those interested in this subject.

American Illustrated Medical Dictionary (Dorland). A new and complete Dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with the Pronunciation, Derivi-ation, and Definition. Twelfth Edition. Revised and Enlarged. Edited by W. A. Newman Dorland, M.D. Large octavo of 1296 pages with 338 illustrations, 141 in colors. Containing over 3000 new words. Philadelphia and London; W. B. Saunders Company, 1923. Flexible Leather, $7,00 net; thumb index, $8.00 net.

This standard medical dictionary is not an encyclopedia. The author designates it as a concise and convenient word-book, aiming to furnish full definitions about terms of medicine and kindred branches, and such collateral information as medical men generally would be likely to look for. This latest edition has been revised in all departments. It has been increased in size by sixty-nine pages, an equivalent of more than 3000 new words over the last edition. A revised and added terminology appears for bacteriology, parasitology, immunology, public health, and genetics. There is no question about the value and usefulness of this edition for every medical practitioner.

NORTHWEST MEDICINE

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ORIGINAL CONTRIBUTIONS

THE DIAGNOSIS AND TREATMENT OF CARDIAC NEUROSES *

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The topic which I wish to discuss with you is in many ways an ordinary one, for the cases in point occur with considerable frequency in the practice anyone who is concerned with general medicine, and I should hesitate to choose so well worn a subject, were it not that various aspects of it are still not entirely appreciated. My own contact with the problem of the cardiac neuroses was immensely extended, and many of you must have had the same experience, during the war. My interest was stimulated by the fact that I was for some time in charge of a special service for the study of heart disease and cardiac neuroses at General Hospital No. 9, Lakewood, N. J.

Large numbers of soldiers were referred to the clinic, but since many of them had been recently drafted and had undergone extremely little training in the army, the questions which arose with regard to diagnosis and treatment were essentially those of civil life. Whether or not they had been recognized as such, these men were at least potential patients before they ever entered the army, and it was only the necessity of adapting themselves to a different type of existence which brought out or accentuated their symptoms. Some of the men had not been directly under physicians while in civil life, but a considerable proportion had been at one time or another under medical care for the same type of symptoms that they manifested when in the army, and the serious point in the situation was that in too many instances the true condition had not been recognized and the proper treatment had not been administered. Without any doubt, we all know more about cardiac neuroses than we did before the war, and we appreciate better than we did how common they are in civil practice, but there are certain fundamental aspects which will bear discussion and reiteration.

The points to which I wish to direct your attention may be well introduced by taking as a text a case which was recently observed in the medical wards of Boston City Hospital. This patient had organic heart disease, but he is of interest in connection with the subject of cardiac neuroses because he represents one of the rare instances of that type of organic heart disease with which the cardiac neuroses are frequently confused.

He was a young man, by occupation a clerk, twenty-nine years of age, who had considered himself perfectly well up to about ten weeks before admission to the hospital, when he caught cold and had a slight sore throat. He continued to work, but a week later noticed that he became short of breath on going up even a single flight of stairs, and he then visited his physician who immediately put him to bed. As the result of complete rest and the administration of digitalis he improved somewhat but his cough persisted and dyspnea continued to cause distress. He was sent into the hospital because of lack of facilities for taking care of him at home.

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* Read before the Second Annual Meeting of Pacific Northwest Medical Association, Seattle, Wash., June 19-21, 1923.

On admission he presented the typical picture of a patient with cardiac insufficiency. He was unable to lie down and even while sitting propped up in bed was slightly cyanotic and definitely short of breath. For our present purposes the physical examination is unimportant except so far as it concerns the heart. The cardiac impulse was best felt in the sixth space and the area of dullness measured 18 cm. in width. There was, therefore, definite cardiac hypertrophy. The rate was 80 and the heart was regular except for occasional extra systoles. On auscultation the sounds were normal at the apex and at the base, and the only murmur heard was a very soft, blowing systolic murmur localized at the apex. This murmur was exactly similar to the systolic blows that one often hears in the hearts of healthy young men. The blood pressure was normal. The clinical picture presented by the patient was thus one of cardiac insufficiency, but the physical examination gave no evidence of any valvular lesion. This feature impressed us as being most unusual, for serious cardiac failure in young persons almost invariably occurs in patients with chronic endocarditis.

The case was considered to be one of myocardial disease and it was felt that this might be one of the instances in which the electrocardiograph would give valuable diagnostic evidence. This turned out to be so, for the electrocardiogram showed a partial heart block with an increase of the auriculoventricular conduction time to 0.24 seconds and the type of ventricular complex which is generally regarded as associated with intraventricular block. While these electrocardiographic changes are directly related only to the conduction system, it may be assumed that arey are due to inflammatory lesions which also extend diffusely thru the heart muscle. This evidence, therefore, confirmed the diagnosis of chronic myocarditis. Under treatment the patient made a gradual improvement and at the end of six weeks he was discharged from the hospital in fairly good condition.

In a few days, however, he began to have shortness of breath, again developed a cough with frothy sputum, and finally so dyspneic that he was unable to lie down. He, therefore, reentered the hospital two weeks after his discharge and presented the same general picture as on the first admission, but with much more marked shortness of breath. His physical examination was practically the same as on his first admission except that the heart was somewhat more rapid. No new murmur had developed and there was no change in the systolic murmur which followed the first sound at the epex. At the apex, however, there was now audible a very definite gallop rhythm, such as one so frequently hears in serious cases of myocardial weakness. In spite of treatment the patient's general condition became worse. The heart did not respond to digitalis and the dyspnea increased. He finally developed a bronchopneumonia and died.

At autopsy the heart showed a most remarkable and extensive fibrous myocarditis, involving the walls and septum of the ventricles. The papillary muscles were almost completely replaced by fibrous tissue. Mural thrombi were present and there was a necrotic area near the apex of the left ventricle. The entire endocardium was thickened and yellowish and microscopic examination showed extensive destruction of the fibres of the conduction system thus accounting for the changes in the electrocardiogram. Perhaps the most striking thing about the whole heart, however, was that there was not the slightest evidence of a lesion of any of the heart valves.

The question of etiology is important but complicated. There was a history of three attacks of pneumonia at 5 months, 5 years, and at 26 years of age, and of typhoid fever at 19 years, but neither of these diseases is apt to produce permanent damage to the heart. There was no history of venereal disease and the Wassermann reaction in the blood serum was negative. At the age of 22 the patient had a perfectly definite attack of acute rheumatic fever and there is much reason to make one feel that this was the etiologic factor in causing the myocarditis. We know that the heart is attacked in acute rheumatic fever with great regularity and, altho the valves are usually most frequently affected, the myocardium is also involved with considerable constancy. It is, therefore, quite possible that this was an instance of rheumatic myocarditis without concomitant valve lesion. It is, of course, conceivable that the whole process was the result of the minor infection which preceded the development of dyspnea, but the pathologic lesions suggested a process of longer standing and it is much more likely that this infection was merely the factor producing the final cardiac insufficiency.

The case, therefore, is one of chronic myocarditis without involvement of the valves, probably of rheumatic origin, occurring in a young man, and particular emphasis is to be laid upon the fact that pure myocarditis at this age is an extremely rare condition. We have here another illustration of the fact that the exception proves the rule.

For general practical purposes the great majority of patients with heart disease may be considered as falling into one of two groups, that of valvular heart disease and that of myocardial disease. Many criticisms of such a classification may be offered, such as the fact that the element of heart muscle damage is of fundamental importance in valvular disease, but it is, nevertheless, of definite working value. In general, these two types of heart disease occur at different age periods.

Myocardial disease, without associated valvular lesion, is essentially a disease of the latter half of life and is rarely found before the age of 40. Arteriosclerosis is one of its most important causes. Many instances of myocardial weakness occur in connection with vascular hypertension or with thyroid disease, but in general the cases of myocardial weakness associated with these conditions are found in older persons. Syphilis is rarely the cause of pure myocardial disease in young people, and the other infections which produce serious lesions limited to the heart muscle, such as diphtheria, are only exceptional causes of chronic heart damage. Permanent, severe, purely muscular lesions of the heart, such as that illustrated by our patient, are thus extremely rare before the age of 40.

In contrast to this, chronic heart disease with valvular lesions, is essentially a disease of the first half of life. Infections which are recognized as particularly prone to damage the endocardium, as rheumatic fever, chorea and acute tonsillitis are, broadly speaking, infections of youth, and they are relatively uncommon in the later half of life. Patients with valvular heart disease often live well into the second half of life and may die at a ripe old age, but in the great majority of instances they have acquired their cardiac lesions before middle life. The exceptions are those patients who have been subject to the infections of youth during middle age or perhaps during their second childhood. In general, therefore, one may accept the fact that heart disease beginning before 40 years of age, primarily is valvular heart disease, but originating after the age of 40 is primarily myocardial disease. Valvular disease beginning after 40 years of age, however, is much more common than myocardial disease manifesting itself before 40, and thus the case which we have just been considering is a striking exception to the usual rule.

In the late stages of heart disease the clinical picture is the same in both endocardial and in myocardial disease, for it is the clinical picture of heart failure and it is due to the weakness of the muscle, whether or not there are any valves involved at the same time. In the early stages, however, the two types are distinctly different. The diagnosis of valvular disease in these early stages depends largely on the physical examination and it must often be made before symptoms appear and quite apart from the development of symptoms. It is based on the physical signs which are found on examination of the heart. Evidence of hypertrophy is, of course, important, but it may be absent in the earliest stages, so that the presence of murmurs becomes the most important single sign.

It is on the murmurs that the recognition of different types of valvular lesions must largely depend. One of the outcomes of the examination of enormous numbers of young men during the war is that there is a much more widespread comprehension of the variations which occur in the normal heart and particularly of the murmurs which may occur in healthy people. We have learned that diastolic murmurs are much more indicative of organic heart disease than are systolic murmurs and we know that the systolic murmurs heard best at the apex or in the second left intercostal space, the so-called pulmonary area, are usually in themselves of little or no significance. It may, therefore, be difficult to determine the importance of systolic murmurs and this is particularly true of the systolic murmurs in cases in which the differentiation between a normal heart and an uncomplicated mitral insufficiency arises. In general, however, the recognition of valvular heart disease is a comparatively simple matter.

In contrast to valvular heart disease, the diagnosis of which in the early stages depends on the physical examination, the diagnosis of myocardial disease at the beginning depends almost entirely on the history. Physical signs, detectable even by the most refined methods, may or may not be present, and hypertrophy, murmurs, arythmias and gallop rhythm are unreliable diagnostic criteria. Myocardial disease manifests itself essentially as a disturbance of function and the first evidence of it is usually the production of symptoms. The patient may have a heart which is entirely normal to physical examination and the diagnosis must then be based on symptoms which suggest a lessening of cardiac reserve, such as undue shortness of breath on moderate exertion and the presence of precordial pain or palpitation.

It is here, therefore, that we come face to face with an extremely difficult diagnostic problem. There are many cases with an exactly similar train of symptoms, pain, dyspnea, and palpitation, which occur in young people long before middle life and which simulate in many ways myocardial disease. They have the symptoms which we are accustomed to find in the early stages of muscular insufficiency in older people, but the examination of the heart does not show the physical signs of valvular lesion that we expect to find in patients with heart disease at their time of life. The heart is normal in size and, barring the type of systolic murmur that may be present in any healthy person, there is nothing which suggests an involvement of the valves. In a great majority of these cases valvular heart disease can be readily excluded as a possible diagnosis. Not infrequently, however, it happens that a positive diagnosis of organic heart disease is made on the basis of the symptoms, and if a more detailed diagnosis is attempted, the condition is usually termed "myocardial disease." Now, myocardial disease is, as has been indicated, peculiarly rare in young persons and the subsequent history of these cases almost invariably supports this contention. They do not show the progressive downward course, slow or rapid, which occurs in most patients with chronic myocarditis, but continue in the same general condition and frequently live exceptionally long lives. They are, as a matter of fact, patients with entirely normal hearts. The man whom I have described to you was, it is true, a patient with uncomplicated myocardial disease at 29 years of age, but if it is borne in mind that he represents a most unusual condition, the error of making a diagnosis of primary myocardial weakness, where none exists, will often be avoided.

These young people, who present so many of the symptoms which are associated with cardiac insufficiency but who have hearts that are normal on phyical examinations, are patients with cardiac neuroses. During the early part of the war, when the condition was not generally appreciated, they were spoken of as cases of "disorderly action of the heart," "soldiers' heart," or "functional heart disease," but as its nature became more apparent, and as it became realized that the cardiac element was certainly not of primary importance, the term "effort syndrome" came into common use. This designation is not wholly satisfactory, but it at least has the advantage of not calling attention to the heart and it indicates the circumstances under which the symptoms frequently occur. Another term, "neurocirculatory asthenia," is perhaps better chosen, because it suggests the important role which nervous disturbances play in the production of the symptoms, but the phrase is so unwieldy that its practical value is limited. The patients who fall into the group of cardiac neuroses are for the most part individuals with considerable emotional instability, the result of some as yet not clearly defined affection of the central nervous system. The symptoms which they complain of are usually referred to the heart or to the circulatory system as a whole, but they are not the result of any circulatory disease and they are due to emotional disturbances which cause a nervous reaction and secondarily induce an overactivity of the heart with a tendency to rapid, shallow breathing.

The symptoms which are most apparent in persons with cardiac neurosis are dyspnea, precordial pain, dizziness, fainting, tremor, sweating, flushing and visual disturbances. It is these symptoms, which we so habitually refer to the cardiovascular system, that are first spoken of by the patient and to which our attention is apt to be drawn in the ordinary course of history taking. Associated with these, however, and, in most instances, the really fundamental and characteristic feature, is a tendency to rapid general fatigue. Fatigue or exhaustion is generally the basic manifestation of the condition and in connection with fatigue and other symptoms come to the front. The patient says, "when I get tired I get out of breath," but the important thing is that first of all he gets tired. The fact that a tendency to easy and rapid fatigue is the underlying factor in so many of these patients and that general physical weakness is important in the production of the symptom complex, is a point to which attention will be drawn in the consideration of treatment.

One aspect of significance with regard to the production of symptoms is the circumstances under which they are prone to arise. Patients with organic heart disease characteristically develop dyspnea or precordial pain or palpitation as the result of undue physical exertion, but in these patients with cardiac neuroses the same symptoms often arise quite apart from exercise and purely as the result of nervous influences. "When I get excited," they say, "I get short of breath." In the army one saw men who reported having perfectly typical symptoms, while they were sitting still at the rifle range waiting for their turn to shoot. They became unnerved by the noise and excitement. Just the same thing takes place in civil life, and careful questioning will often bring out the information that the sensations of dyspnea, or palpitation, or precordial pain are most apt to be brought on by domestic disagreements, business anxieties or fright. In this there is, perhaps, some analogy to the way in which attacks of angina pectoris may occur, but the character of the pain in angina is somewhat different and true angina, again, is very rare in young people, so that in this group, at least, the differential diagnosis is not particularly difficult.

The recognition of the role of nervous influences in the production of symptoms in patients with cardiac neuroses is thus a valuable diagnostic criterion. It is also of interest to consider the background of the patients who develop the symptoms which we have been discussing. In many of them the family history reveals abnormalities, such as mental disease, epilepsy, and more often extreme "nervousness" in one or both parents or in brothers or sisters. The patients themselves usually give a history of having "never been strong." They have not had more actual sickness than falls to the lot of most children, but they have generally been regarded as being weak. This has led to the parents becoming extremely solicitous as to the child's physical health, and the nervous tendency, so often apparent in the mother, finds expression in the anxiety with which she shelters and protects her offspring. It is not always easy to discover at just what point the patients come to be regarded as less robust than normal. Sometimes it is in infancy, sometimes in childhood, and more rarely in adolescence.

In many cases the history dates from an acute infection—often not a very severe one—and in a surprising number of instances either the family or the patient recalls the statement of a physician that they had a "weak heart." The exact nature of the supposed cardiac disease is usually vague and often the doctor is said to have remarked that "it was not serious," but once the idea of "weak heart" has been implanted, both the patient and his family devote great attention to giving him what they conceive to be the best possible care. This consists in constant and strict limitation of physical exercise lest some untoward accident occur, for in the lay mind "heart disease" is apt to connote the probability of sudden death.

But the idea of "heart trouble," which is so frequently present, is not invariably the result of suggestion by a physician and it may exist in spite of repeated assurances by medical men that the heart is normal. Sometimes the patient has "discovered it for himself." He feels his heart beat or "jump" and he notices other symptoms which he has read of or heard of in connection with heart disease. He convinces himself of his own diagnosis and then institutes what he believes to be the accepted form of conservative treatment. In many cases, therefore, there is a fixed idea of heart disease, but this association is by no means constant and other patients merely give the history of not having been as strong as other boys and of not being able to play the more strenuous games. It is interesting that investigation often brings out the fact that the child did not really enjoy athletic sports and that he was secretly rather glad to have a respectable excuse for avoiding them.

A vague story of varying degrees of physical inferiority runs thru the life history of most of these patients, but coupled with it there is almost always a train of neurotic symptoms; a bad neurologic family history with a poor childhood environment, a history of nocturnal enuresis, of epilepsy, of fainting, of shyness or extreme nervousness and irritability, and of various phobias, including the fear of "overdoing" or "overexerting." These are the most frequent types of nervous abnormalities which are met with. Physical and neurotic stigmata are almost always combined and only the degree of prominence of the one or the other seems to vary. There is undoubtedly a complex relation between the two and it is difficult to analyze how far one has influenced the other. In certain instances it is true that the difficulty seems to be essentially physical, as if there were an abnormal weakness of the body tissues, but in a great majority the fundamental picture seems to be a neurotic constitution with a lack of moral force, decision and control, while secondary to this is a physical element which is largely dependent on lack of physical development. Restricted from childhood by these nervous and physical limitations, the patients have usually reacted to life in much the same way. Experience has taught them that overexerting or overexcitement leads to the production of symptoms and they, therefore, strive to find a way of life in which the strain is well within the margin of their powers. In childhood they avoid strenuous and competitive games and, if in maturity the first type of work selected requires too much exertion, they change to lighter jobs until, after many attempts, they finally find a type of work suited to their own physical limitations. They live at a low economic level, indulge in much introspection, and accept with a curious resignation the fact that on account of their supposed physical handicaps they cannot hope to get much joy out of life.

During the war when interest was particularly arousing in the cardiac neuroses, it was possible to recognize two distinct groups of cases. The first consisted of previously strong and healthy men who had carried on under the terrible conditions of modern warfare, until the physical and nervous strain became so unbearable that they finally broke down. This type was more common in the foreign armies than in the American army because our troops were not subjected to nearly as much actual warfare. The second group of patients includes those we have had under discussion, in whom prolonged physical weakness and nervous invalidism were accentuated or brought to light by the necessity of their adapting themselves to the unusual exigences of military life. This group, to whom so much attention was paid during the war, comprises, however, only a small part of the problem of civil medicine in relation to the cardiac neuroses.

Some idea of the extent of the problems in civil life is obtained, when one realizes that all the patients with cardiac neuroses in the army were more or less picked men, for uundoubtedly many more marked cases had been eliminated by local examining boards among the great numbers who were rejected on account of their physical disabilities. The cases in the army, moreover, represented practically only one age group and there is certainly just as high a percentage of cardiac neurosis below military age and above military age as there were in this limited group, about which we have the most information. Then, again, in civil life one has to deal with the female, as well as the male sex and one may expect at least as many subjects among women as among men. But even this is not the sum total. Beyond all those who for some reason or other seek medical advice, there are, without question, many other patients who get along without consulting a doctor and who, by limiting their lives to within the narrow range of their physical and nervous powers, are able to lead what they regard as a normal existence. All the modern movements that encourage general systematic physical examinations in schools, colleges, and in the business world will undoubtedly bring to the front many of these now unrecognized cases.

Dejerine, the eminent French neurologist, states that cardiac neuroses occur next in frequency to gastri neuroses. It is not necessary to enumerate the various forms in which cardiac neuroses appear or to dwell on those border line cases in which the general symptoms outweigh the cardiac symptoms in order to impress on you that there is a great mass of people without organic heart disease who are unable, on account of symptoms that may be referable to the heart or circulation, to meet the strain of average life and are proper subjects for medical care and supervision. Quite apart from the humanitarian aspect, the economic aspect of the condition is extremely important, for the majority of these patients lead a comparatively parasitic existence. Neither in peace nor in war do they contribute their share to the general social life.

For the physician, the first point of importance in considering the cardiac neuroses is that of diagnosis. Two dangers arise. In the first place, one may miss the diagnosis and pay no attention to the case. The worst that can result from this is that the patient will continue to limp thru his ineffective career and the chance of making him into a useful, happy citizen will have been lost. The second danger is that the wrong diagnosis may be made and the patient may be considered to have organic heart disease. This is a much more serious error. It frequently results in condemning him unnecessarily to a life of invalidism, for once the diagnosis is made it is extremely difficult to alter it or to eradicate it. In general practice and in hospital wards it is common to see the results of this wrong diagnosis and most of us know from experience how difficult it is to convince a patient that he has a normal heart, if it has ever been suggested to him that he is the subject of cardiac disease. These people with cardiac neuroses are extremely conservative and they believe that it is safest to accept the worst diagnosis and then submit to the most strict treatment.

So serious is the danger of making an invalid, where there is no cause for invalidism, that I often think it is worse to make the diagnosis of organic heart disease where none exists than it is to miss the diagnosis of chronic heart disease in young people. Most cases of chronic heart disease in young people, with the exception of the severest forms, will take care of themselves pretty satisfactorily. All that is necessary is to live a life which does not produce dyspnea, precordial pain, or undue fatigue and, since these are unpleasant symptoms, they constitute a natural safety valve which will usually prevent serious harm being done. On the other hand, to make a diagnosis of cardiac disease in a person with a normal heart often amounts to the wrecking of a life.

The treatment of cardiac neuroses is as easy to outline as it is hard to carry out. It consists essentially of mental hygiene and physical development. The former is the more important and much the more difficult for doctor and for patient. First of all it is necessary to get away from the idea of physical invalidism and particularly from the idea of heart disease. One of the most effectvie means of doing this is by making an extremely careful physical examination, including in it the use of the modern instrumental methods which may throw light on the condition of the heart. The psychologic effect of a complete, thoro examination cannot be overestimated and it is extraordinary to see how often a patient will respond to it and will accept the verdict that he is physically sound.

The next step is to convince him still further by making him take gradually increasing amounts of exercise and by showing him that not only is he uninjured but that he is benefited by it. The patient's attention should be directed to improving his general condition and not to improving his heart. Beyond this it is necessary to procure an interesting and if possible absorbing occupation. One cannot lay too much stress on the importance of regularity of work, of accuracy in performing all technical procedures and of completing everything that is undertaken. The natural tendency to do things halfheartedly and to avoid concentrated effort must be overcome. It is essentially a problem of character training and sometimes the problem is as difficult as that of transplanting vertebrae into the spineless jellyfish.

The significance of physical development in the symptom complex of cardiac neuroses was clearly indicated by the results of tests of muscle strength carried out by Dr. Bertnard Smith at the Lakewood General Hospital. These tests consisted of measurements of the pull against a spring balance of various muscle groups, according to the method of Martin, and they were applied to large numbers of normal soldiers as well as to soldiers with cardiac neuroses. The average strength test of normal young men was found to be expressed by the figure 25, while that of the patients with cardiac neuroses, and particularly of the group which corresponds to those seen in civil life, was 12. The muscular strength of the patients was, therefore, only about 50 per cent of normal.

In the consideration of fatgue it is extremely difficult to differentiate between the purely muscular factor and the mental factor which is associated with it, but the manner in which physical exercises improved the strength tests make it certain that the muscles themselves are not to be neglected. After being put thru carefully supervised, graduated exercises many of the patients who had low strength tests were brought up into the normal class. Together with the physical development went a mental and moral development. Physical exercise bred selfconfidence, and with selfconfidence came the ability to look at the world from a more normal and sane point of view. Sometimes it is extremely difficult to make these patients with cardiac neuroses undertake any physical exercise because they dislike it and fear its effects, so it must always be carried out under sympathetic but strict supervision until a complete selfconfidence has been obtained. The problems of mental and physical training in the treatment of the cardiac neuroses are difficult and time consuming and they require a physician with a personality that is specially adapted to them if they are to be carried out successfully. The results that may be attained, however, are well worth the effort that goes into them for proper treatment often means a life rescued from futility and restored to economic and social efficiency.

A NEW METHOD OF ESTIMATING HEART MUSCLE *

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My object in presenting this subject is to demonatrate a new method of gaining an insight into the character of the heart's muscular wall. Our chief duty in dealing with patients who have heart trouble is to inform them as accurately as possible regarding their heart's capacity for work. Capacity for work is what they wish to know. "How much work can the heart still be made to do," is the question each patient wishes to have answered, and if we are to render real service, we should work diligently to answer this practical question. Aortic regurgitation, mitral stenosis, auricular fibrillation are names we give to diseased conditions of the heart. These mean little to our patients, but the interpretation of these conditions in terms of heart strength means everything to them.

I hope to be able to demonstrate that we may gain a little more insight into the firmness of the heart's muscular wall by this method. To do this we use a fluoroscopic screen, to which we attach a plate of plain glass. On this plate we sketch the outlines of the heart, lateral chest walls and diaphragm. This we do when the patient is breathing very quietly. We then ask him to take a deep inspiration and hold it, while we sketch the altered contour of the heart and diaphragm. We then request him to blow all the air out of his lungs and hold it out, while we again quickly sketch the lateral borders of his heart. During deep inspiration the diaphragn descends and the transverse diameter of the heart is narrowed. This we call the minimum diameter. The transverse heart diameter, taken during quiet respiration, we call the mean diameter. During full expiration the diaphragm rises to its highest level, the heart's transverse diameter is broadened and its width constitutes the maximum diameter.

A firm heart muscle will not permit the heart to expand as will a flabby muscular wall. The difference between the maximum and minimum transverse diameters will give us an idea of the character of the muscular wall of the heart. The softer the muscle the greater the expansibility and the firmer the muscle the less will the heart expand. The way in which we obtain this information will be easy of demonstration by means of our slides.

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* Demonstrated before the Thirty-first Annual Meeting of Idaho State Medical Association, Idaho Falls, Ida., June 13-14, 1923.

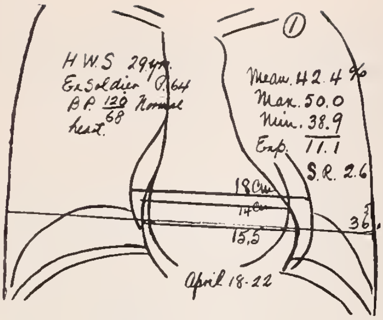

FIG. 1

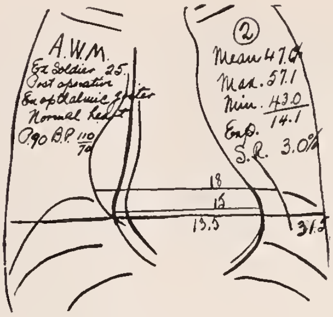

FIG. 2

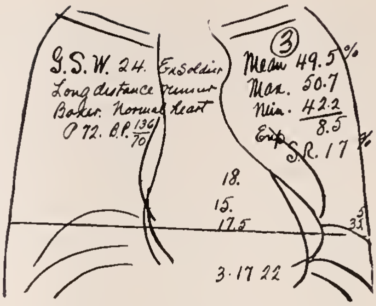

FIG. 3

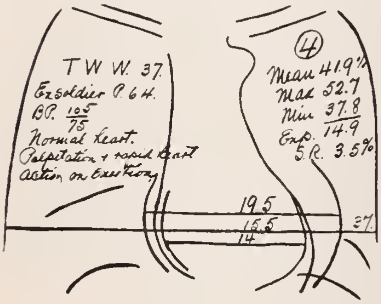

FIG. 4

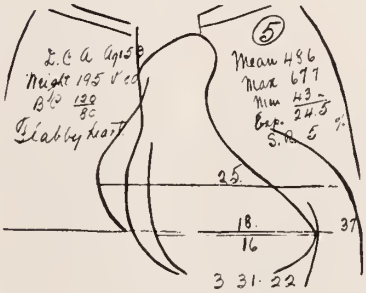

FIG. 5

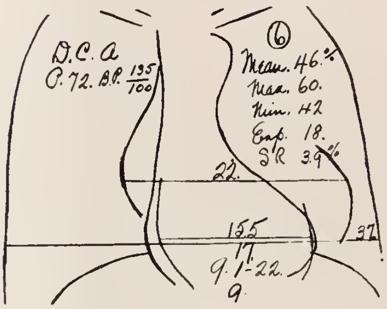

FIG. 6

Fig. 1. Is a sketch of the heart of an ex-soldier, 29 years of age. It was found on examination to be quite normal. The transverse chest diameter is 36.5 cm. The broadest transverse diameter of the heart during quiet respiration is 15.5 cm. This is 42.4 per cent of the chest diameter at this level. This we call the **cardiothoracic ratio or mean diameter.** The maximum diameter during the full expiration is 50 per cent of the chest diameter and the minimum during full inspiration is 38.9 per cent. The difference between the two gives us the maximum heart expansion, this is 11.1 per cent. We now divide 11.1 by the mean cardiothoracic ratio, which is 42.4 per cent. This gives us the figure 2.6 per cent. We term it the **size ratio** and we have found that normal hearts usually have a size ratio in the neighborhood of 2.6 per cent.

Fig. 2. This is also the heart of an ex-soldier, 25 years of age. He was operated on for exophthalmic goiter several years ago. We could find no cardiac abnormality. His pulse was 90, and his blood pressure 110-70. The mean cardiac diameter is 47.6 per cent which is nearing the borderline of enlargement. The size ratio is nearly 3.0 which approaches the figure we find in hearts with flabby walls. That the cardiac wall is flabby is also suggested by the blood pressure of 110-70.

Fig 3. This plate shows the heart of another ex-soldier. He has been a long distance runner and is now quite a boxer. We would expect to find an athletic heart. We do find it slightly enlarged, but no other abnormalities, its mean transverse diameter being 49.5 per cent of the chest diameter. The size ratio is 1.7 per cent, and this figure we find in hearts with firm hypertrophied walls. His slightly increased blood pressure is 136-70 which is to be expected in these hearts with a firm hypertrophied myocardium.

Fig. 4. Also of an ex-soldier, 37 years of age, with normal heart findings, but with a blood pressure of 105-75. He complains of palpitation and rapid heart action and dyspnea on exertion. We find his cardiothoracic ratio to be 41.9. This is well within normal limits. The size ratio, however, is 3.5 per cent, which indicates a flabby heart muscle. We know of no other means of so graphically demonstrating the cause of this man's trouble. He has a weakened soft myocardium which with proper care and judicious exertion may be strengthened so that he may eventually have a good functioning heart.

Fig. 5. D. C. A. Government official, 53 years of age. For twenty-five years he has worked indoors at his desk. He takes very little exercise. He complains of depression, shortness of breath on slight exertion. He was recently refused health and accident insurance. He never had any serious illness, and as a young man did very hard work and indulged in strenuous exercise. His weight 195½. His height 5 ft., 9½ in. Pulse 80. Blood pressure 120-80. His heart examination reveals no abnormalities. His blood and urinary findings give no additional light as to what is the matter with him. An x-ray of his chest revealed a heart of nearly normal dimensions, the cardiothoracic ratio being 48.6 per cent, quite within normal limits for his age. When, however, we come to measure the expansibility of his heart, we find it is 24½ per cent, with a ratio of 5.0 per cent. We now know where the trouble is. He has a heart, the walls of which are very flabby. This we found on March 31, 1922. We told him to get away from his desk as much as possible, to very slowly begin to take exercise, which later was increased and still later he went to a ranch in Wyoming for two months.

Fig. 6. On Sept. 1, 1922, just five months later, we again saw him and measured up his heart. As you see his pulse was 72. Blood pressure 135-100. The cardiothoracic ratio was 46 per cent. The expansibility 18 per cent, whereas, five months before it was 24½ per cent. This size ratio was 3.9 per cent. He felt fine and his shortness of breath had greatly improved and we could accurately measure the improvement.

Fig. 7. Is that of a structural worker, 37 years old. He is also a professional wrestler. He has a non-toxic adenoma of his thyroid, which pushes his trachea to the left and extends beneath the sternum. His heart is slightly enlarged. The size ratio is, however, 2.0 per cent, which indicates a firm heart wall.

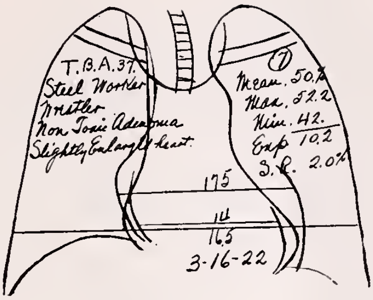

FIG. 7

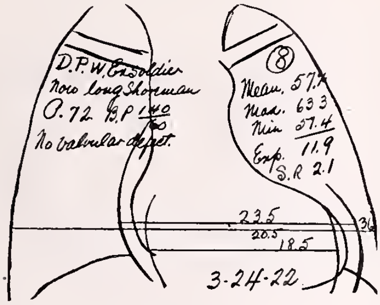

FIG. 8

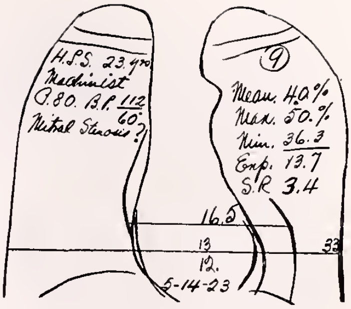

FIG. 9

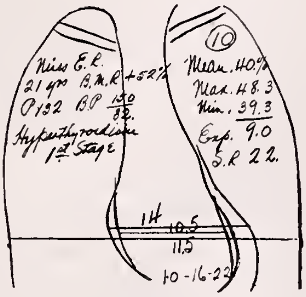

FIG. 10

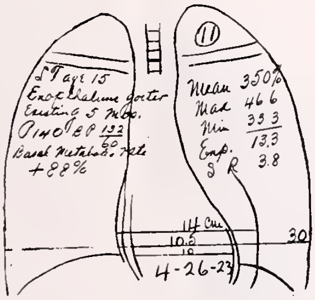

FIG 11

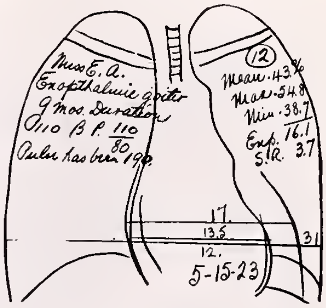

FIG. 12

Fig. 8. Is one of an ex-solder, 35 years old, also a longshoreman and doing the heaviest kind of labor. Our drawing shows a cardiothoracic ratio of 57 per cent, a marked enlargement due, we believe, to his laborious work. He was referred to us by the U. S. Veterans Bureau for a metabolic rate, as he had a goiter. In reality he had a beginning decompensation of his heart and could not do his former work. When we glance at this slide we can readily comprehend the reason for his inability to continue such strenuous work. The mean cardiac diameter is 57 per cent of the chest diameter. The size ratio, however, is only 2.1 per cent, which indicates that his heart muscle is firm, but from his symptoms and the size of his heart we know he cannot long continue his present work.

Fig. 9. This is the heart of a young man, 23 years of age, a machinist, who finds such work too much for him. He has questionable diagnosis of a mitral stenosis. His heart is small, occupying 40 per cent of the chest diameter. The size ratio is 3.4 per cent, indicating a lack of firmness of the heart wall. The blood pressure is 112-60. These three facts suggest that the occupation of a machinist is too strenuous for this young man and we advised a change.

Fig. 10. We have a few goiter hearts to show. This young lady is the daughter of a New York physician. She started to tour the West in apparently perfect health. Four weeks after leaving New York she arrived in Seattle and presented the picture of typical hyperthyroidism. Her pulse was 132, blood pressure 150-82, basal metabolic rate plus 52 per cent. Her heart as you see is small, occupying 40 per cent of the chest diameter. The size ratio is 2.2 per cent which is that of a normal heart. The disease has not yet had time to weaken her heart muscle.

Fig. 11. Is one of a girl only 15, with typical exophthalmic symptoms, which began five months previously. Her pulse was 140, when we saw her. Blood pressure 132-60, basal metabolic rate plus 88 per cent above normal. She had lost 20 lbs. in weight and had a four plus tremor of her extended fingers. Her heart is of the narrow drop type, being only 35 per cent of the chest diameter. The size ratio, however, is 3.8 per cent, indicating a weak, flabby heart muscle which is of course to be expected in such cases after five months of severe heart strain.

Fig. 12. Is very similar. She is a young lady from Moscow, Ida. She is another typical case with a three plus exophthalmos. She noticed her first symptoms nine months ago. Fortunately she fell into the hands of one of the good doctors of Idaho, who made her rest in bed and later ligated both superior arteries. When we saw her, the pulse was 110; it had been as high as 190. Her blood pressure was 110-80, and her heart findings normal. On x-ray examination we found her heart normal in size, shape and position. Her size ratio was 3.7 per cent.

In these two cases we have reason to assume that the five and nine months, respectively, of wear and tear on these hearts has damaged them. Neither physical examination nor x-ray plates, however, will show this. The size ratio indicates very nicely to what degree the myocardium has been weakened. Both of these heart walls are flabby and I know of no other method in use at present that will demonstrate this fact so clearly as the size ratio.

Fig. 13. We now have some very distinctly pathologic hearts to show. This first is that of a man formerly accustomed to hard work. He is 38 years of age. He gives no history of any acute infections disease other than "flu" in 1918. He was in bed ten days then and has been short of breath ever since. When we first saw him he was compelled to sleep sitting in a chair and could not walk one-half block. He had a typical mitral stenosis with auricular fibrillation and a pulse deficit of 56. He always responded promptly to rest and digitalis. When first seen, the x-ray plate showed his transverse diameter to be 52.9 per cent. Two weeks later, when he came to the office, we found a mean diameter of 50.7 per cent and a ratio of 2.0 per cent. This meant that the dilation at first present had subsided. His heart was large, however, and our size ratio indicated a firm thick wall.

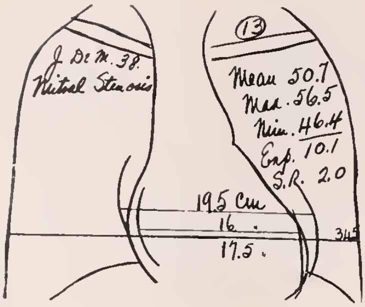

FIG. 13

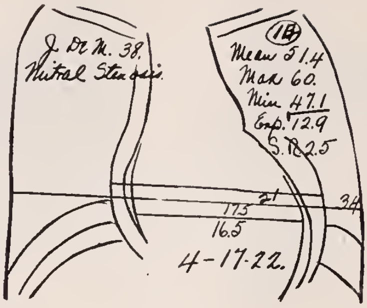

FIG. 14

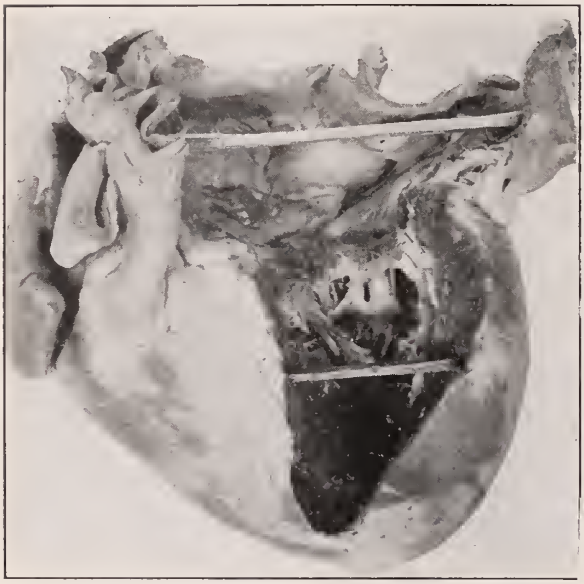

Fig. 15

Fig. 14. (Same patient shown in Fig. 13.) Made two months later showed this size ratio to have increased to 2.5 per cent, showing that the firmness of the heart muscle had decreased. This was confirmed by the slight increase in transverse diameter, and also by his symptoms of renewed decompensation. We saw him no more after April 17, 1922, until called hurriedly one night to his home in the country. We found him sitting in a chair dead. Those possessing hearts with damaged valves, but with hypertrophied walls frequently die suddenly without any preceding edema or other signs of decompensation. You will note the damaged valves and hypertrophied walls in Fig. 15, the latter having been suggested by the size ratio of 2.0 per cent.

Fig. 16. This is a sketch of the heart of an old man, 72 years of age, but still active and working hard. Dr. John Hunt removed a large toxic adenoma some months before. His pulse was 60, his blood pressure 215-110. His radial arteries were like pipe stems. With such arteries we would quite naturally expect to find an enlarged heart, with thick firm wall. Our fluoroscopic sketch confirms this assumption; the mean transverse diameter is 53.4 per cent. His old hyperthrophied walls cannot expand much and we find his size ratio is only 1.29 per cent. Low size ratio percentages are the rule in those cases in which the blood pressure is high.

Fig. 17. Is a sketch of the typical ox heart of aortic regurgitation. The patient is 43 years of age. His endocardial involvement dates back to 1901, when he suffered an attack of rheumatic arthritis. His Wassermann tests have always been negative He has complained of shortness of breath for only three years. He is still working daily as a merchant. His mean cardiac diameter occupies 63 per cent of his chest diameter, but with such hypertrophied walls the expansibility of such a heart must be slight. We get a size ratio of 1.12 per cent. His aortic arch, as you see measures 6 cm.

Fig. 18. This plate shows the heart of a man 59 years old, who has had a mitral lesion since childhood. He is very intelligent and knows far more about his heart and how to care for it than any doctor. He knows his heart's capacity for work and most carefully avoids overdrawing his small heart balance. He is working daily as head of a printing business. You note his transverse diameter is 62.8 per cent. The difference between the maximum and minimum diameters is 12.6, and the size ratio 2.0. This indicates marked hyperthrophy and thick, firm-muscled heart walls. When we find such a condition, we know that the case may do well for years, if sudden and excessive strain is avoided; if, in other words, these patients will be satisfied to live within the narrow limits of their heart's capacity.

Fig. 19. Shows a similar condition in a woman. She has had a mitral lesion since childhood. She is now 43 and has several grown children. Her leak is small, as the heart's diameter is almost within normal limits. The size ratio of 1.8 per cent indicates a firm hypertrophied heart wall.

Fig. 20. Is made from an x-ray plate taken in November, 1918. It is rather faded out, but perhaps you can see it sufficiently well to note the tremendous size of the heart. At this time the heart's transverse diameter was 80 per cent of the chest diameter.

Fig. 21. Is a sketch made May 8, 1923, of the same case. It is that of a woman of 52 years, who also dates her mitral insufficiency from childhood. She has a cardiothoracic ratio of 84.6 per cent and a size ratio of 1.28 per cent. There is no dilatation here, but a tremendous hypertrophy. The relation of a huge transverse diameter to a small size ratio distinguishes hypertrophy from dilatation. I have looked after this case for five years. She keeps her own home and does all of the cooking and lighter housework. She too has learned the lesson of keeping well within the limits of her heart's capacity.

Fig. 22. Is a radiograph made five years after the first one shown in Fig. 19. There is an increase of 4 per cent in the cardiothoracic ratio. This 84.6 per cent is, as far as I know, the broadest cardiothoracic ratio on record.

CONCLUSIONS

1. We have, in this method of cardiac fluoroscopy, a means of ascertaining the character of the heart's wall.

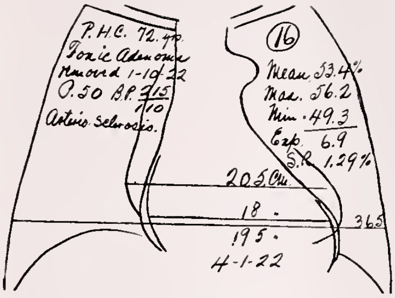

FIG. 16

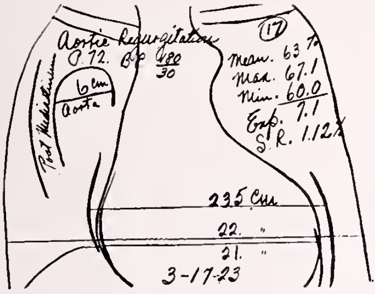

FIG. 17

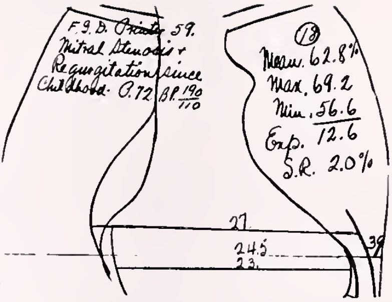

FIG. 18

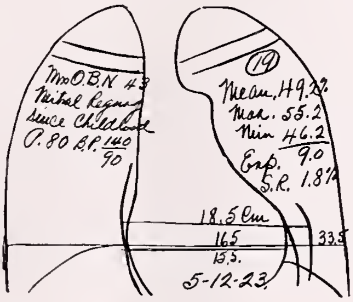

FIG. 19

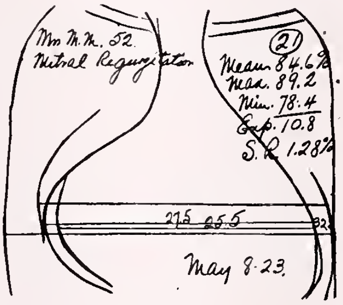

FIG. 21

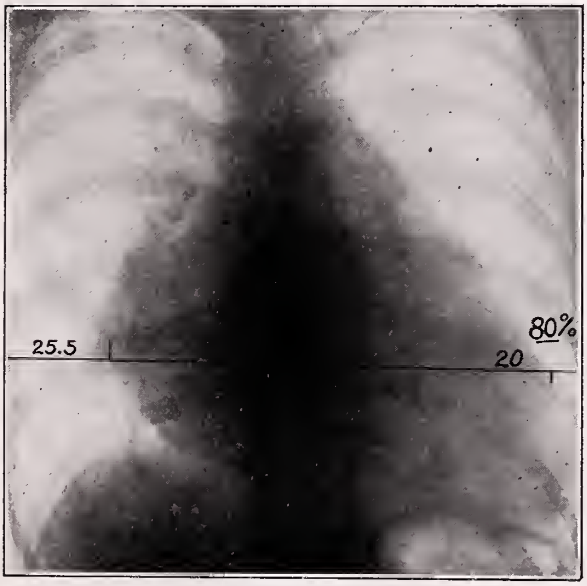

Fig. 20

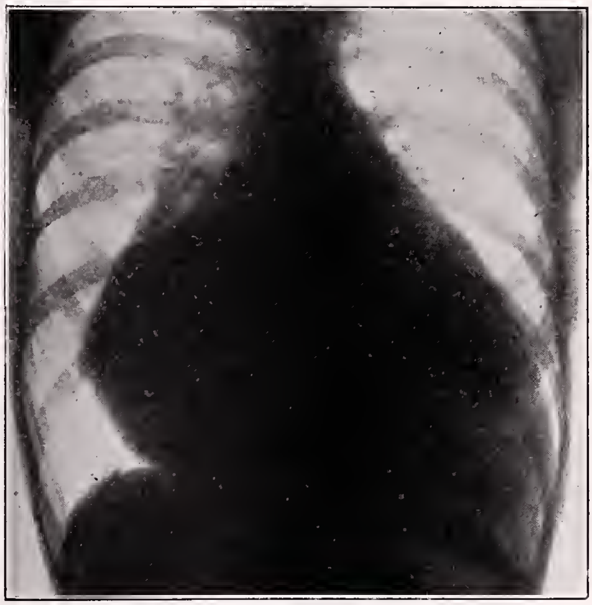

Fig. 22

2. The broadening of the heart shadow on deep expiration gives us high size ratio percentages in the flabby muscled heart, and low percentages in those of firm muscular walls.

3. Information can be obtained only by this method, giving the correct interpretation of the trouble in some hearts apparently quite normal.

ADMINISTRATION OF DIGITALIS BY RECTUM

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In the treatment of patients with cardiac disease situations sometimes arise when, for some reason or other, the administration of digitalis by mouth is impossible or inadvisable, and yet the indication for its use is clearly defined. Such situations arise immediately following surgical procedures, particularly operations on the stomach, in cases of acute gastrointestinal crises of exophthalmic goiter, when vomiting is the dominant feature, in cases of vomiting due to splanchnic congestion independent of digitalis by mouth, and in certain cases of incomplete digitalization, in which relatively small doses of the drug have been administered for a long time.

About five years ago we began to give digitalis by rectum in cases in which the foregoing problems confronted us, with extremely satisfactory results. Our data are based entirely on the use of the Minnesota-grown digitalis leaf purpurea, from which a tincture was prepared and carefully standardized by the Hatcher cat unit method.

The tincture was added to a normal salt solution, and slowly instilled into the rectum after a cleansing enema. The dose varied in individual cases, but one of two definite methods was used. In most instances one rectal instillation of 6 c.c. of the tincture of digitalis in 100 c.c. of normal salt solution was given and repeated daily, until the desired degree of digitalization was obtained. In a smaller group of cases three daily rectal instillations of 2 to 2.5 c.c. of the tincture in 60 c.c. of normal salt solution were given. The convenience of the first method, and the earlier effect obtained, makes this the procedure of choice. No untoward effects have been encountered, either from the drug or from rectal intolerance.

By giving the large dose, a distinct effect of the digitalis was evident within one or two days, while with smaller doses three to five days were required to obtain the same results. The following example is cited as illustrative of the effect of the rectal administration of digitalis.

A patient was recently admitted to the hospital, extremely ill from severe cardiac decompensation resulting from chronic pancarditis. Dyspnea was marked, the patient being unable to lie down, peripheral cyanosis was pronounced, there was marked edema of the extremities, sacral edema, a moderate degree of ascites, and chronic passive congestion of the lungs, liver and kidneys.

Physical examination revealed the signs of chronic adhesive pericarditis, chronic myocarditis with dilation and hypertrophy, and chronic endocarditis with mitral stenosis and regurgitation. The heart rate was rapid (116 each minute), and the rhythm was regular. Electrocardiographic study disclosed auricular flutter, the auricular rate being 258, and the ventricular rate 114 each minute, with varying degrees of partial heart block (2:1 to 3:1). The patient was nauseated, partly because of splanchnic congestion, and partly because of inadequate protracted administration of digitalis elsewhere.

On the day of admission 4 c.c. of the tincture of digitalis was administered in two doses, six hours apart, but the neausea was so pronounced the following morning that digitalis was discontinued. The electrocardiogram still revealed flutter, the auricular rate being 247 and the ventricular rate 93 each minute. The administration by rectum of 2.5 c.c. of the tincture in 50 c.c. of normal salt solution, three times daily, was instituted. The following day the apical heart rate varied from 72 to 82 and the rhythm was still regular. The patient was much improved in all respects.

No electracardiograms were taken. The third day of the administration of digitalis, the cardiac rhythm was totally irregular, the rate being only 58 each minute. The electrocardiograms confirmed the clinical observations that the flutter was converted to auricular fibrillation. The T waves in Deriviations I and II became negative (inverted), one of the earliest graphic signs of digitalis action.

I have repeatedly observed the same beneficial effects from this method of administration and believe that its value has been clearly established. Levy has recently reported favorable results, following the rectal administration of "digitan," his studies being based on larger dosage. One cubic centimeter of this preparation, he says, is equivalent to 0.1 gm. of the powdered leaf. Eight to 20 c.c. of digitan in 25 c.c. of water were given by rectum. Levy observed slowing of the ventricular rate on an average of two hours and thirty-five minutes after the administration, and the average maximal effect was evident after nine hours and thirty minutes. T wave negativity in the electrocardiogram was observed after an average interval of two hours and thirty minutes, almost coincidental with ventricular slowing.

It is evident that complete digitalis effects are obtained by administration of the drug by rectum, and that the degree and the promptness of the effects depend on the frequency of administration and the size of the dose administered. There is little doubt but that much of the failure attributed to the use of digitalis, regardless of the method of administration, has been due to inadequate dosage, and to the use of preparations that are relatively or completely inactive, and have not been standardized by biologic assay.

Digitalis in therapeutic doses may have the following effects on the heart: (1) slowing of the whole heart thru stimulation of the vagus center in the medulla; (2) prolongation of conduction between the auricles and ventricles, also thru the vagal stimulation affecting the auriculoventricular (His) bundle; (3) slowing of ventricular rate by the production of some degree of heart block thru central stimulation of the vagi, or by direct action on the heart, and (4) a direct action on the myocardium, increasing the force or amplitude of ventricular systole.

Full appreciation of the fact that the action of digitalis is cumulative is important, and is the basis for our methods of intermittent administration. The action of digitalis may persist for periods of two weeks or longer, after administration of the drug has been discontinued[2] [3].

The investigations of Hatcher and Eggleston on elimination of digitalis from the animal organism show that, in some animals, the liver and the kidneys participate in this elimination. The liver seems to play the chief part, as it has the power of rapidly fixing and probably destroying a large proportion of the ouabain after its entrance into the blood stream

The rate of elimination of digitalis, in man, has been investigated by Pardee, who found that about 22 minims were given off daily.

A brief consideration of digitalis intoxication seems advisable, as the general tendency among physicians has been to use too little digitalis because of the emphasis that has been placed on these toxic phenomena. It is true that the patient temporarily passes thru a very uncomfortable period as the result of digitalis intoxication, yet the occurrence of alarming or disastrous signs during the intelligent and careful administration of the drug is so rare as to be almost negligible. The onset of anorexia is the first indication of toxic effect, soon followed by nausea and vomiting. Disturbances in cardiac rhythm next may occur, and these disturbances vary in individual cases. Sinus arrhythmia, premature contractions, coupled beats due to the alternate occurrence of premature contractions, complete heart block, nodal rhythm, and, at times, ventricular tachycardia, may occur. It is necessary, however, to distinguish these disturbances resulting from digitalis administration from those that result from cardiac disease. This can usually be accomplished by careful study before digitalis is administered. In the administration of digitalis to thousands of patients we have as yet seen no serious or alarming symptoms that were attributable to the drug.

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OBSERVATION ON THE ADMINISTRATION OF TINCTURE OF DIGITALIS IN CASES OF AURICULAR FIBRILLATION

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Digitalis has attained its reputation as a remedy in heart disease from its action on cases of auricular fibrillation and recent advances in the diagnosis of heart disease stimulates us with the hope that we shall be able to limit the action of digitalis and define the symptom complex which indicates its use.

ADMINISTRATION

The extremely beneficial results of the administration of digitalis in cases of auricular fibrillation is known to all.

The method of administration may be that suggested by Eggleston*, or in adults to start with an initial dose of 3 c.c. of tincture of digitalis and to administer 3 c.c. every four hours for twelve hours each day, until one gets the therapeutic effect. In giving digitalis in such doses care must be exercised to catch the first signs of toxicity, such as nausea, vomiting, or slowing of the pulse. If the pulse should drop below fifty, or if nausea should arise, administration of the drug should be suspended. As soon as the heart has compensated and the pulse has reached its normal rate, the dosage should be diminished to one-third or one-fourth of the original dosage, aiming to keep the heart compensated and at a normal rate. The dosage from this point may be raised or lowered as occasion arises. Several days time with close observation is required to accomplish this result. Such procedure should not be undertaken except under close observation.

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* Eggleston: Digitalis Dosage. Arch. Int. Med., 1915, 16:1.

THERAPEUTIC ACTIONS OF DIGITALIS

The action of digitalis resulting in the slowing of the heart differs in the case of auricular fibrillation from that heart which is not the seat of such a condition. In the normal heart slowing following the administration of digitalis is incidental to stimulation of the vagus nerve, while in the heart which has a fibrillating auricle the action of digitalis is secondary to the slowing of impulses traveling across the auriculoventricular node.

Below is a diagram of the path over which nervous impulses stimulating the heart muscle to action must travel (fig. 1).

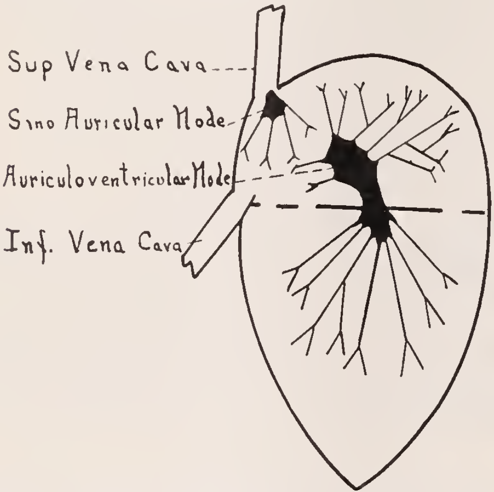

Fig. 1. Diagram of the path of nervous impulses over the heart muscle. (Modified from Janowski.)

Impulses originating in the sinoauricular node must travel over the auricle and into the auriculoventricular node, before they can exert themselves in muscular contraction in the ventricle. This is the accepted route of nervous stimuli passing over the heart musculature. It is easily understood how a· quivering auricle may send multiple stimuli over onto a ventricular muscle which responds as best it can by many contractions, some of which are so weak that the result of them cannot be detected in the radial pulse. These many stimuli, pressing themselves upon a willing ventricular muscle, is what disturbs the rhythm of the heart and throws the cardiac muscle into what some writers have chosen to call a "delirium."

The administration of digitalis renders the passage of impulses over the auriculoventricular node more difficult, so that not nearly so many stimuli can pass to prod the ventricular muscle into action. Hence, there are fewer contractions of the ventricular muscle, and what contractions there are have more opportunity to approximate normal. The length of time which it requires for digitalis to bring the rate of a ventricle stimulated by a quivering auricle to normal varies with the potency of digitalis used. In both instances illustrated here Squibb's fat free tincture of digitalis has been used.

EXPLANATION OF GRAPHIC CHART

The graphic chart is self-explanatory. The upper line represents the rate of the heart beat as counted over the apex of the heart. The lower line is the pulse rate as taken at the radial artery and the space between these lines represents the pulse deficit which is the diagnostic feature of auricular fibrillation. On the chart this pulse deficit is presented as a wide black line and it can readily be seen, that as digitalis is administered, this pulse deficit becomes less and the rate of the heart approaches normal. When the digitalis is discontinued, as was done on the eighth day of treatment in case 1 (fig.

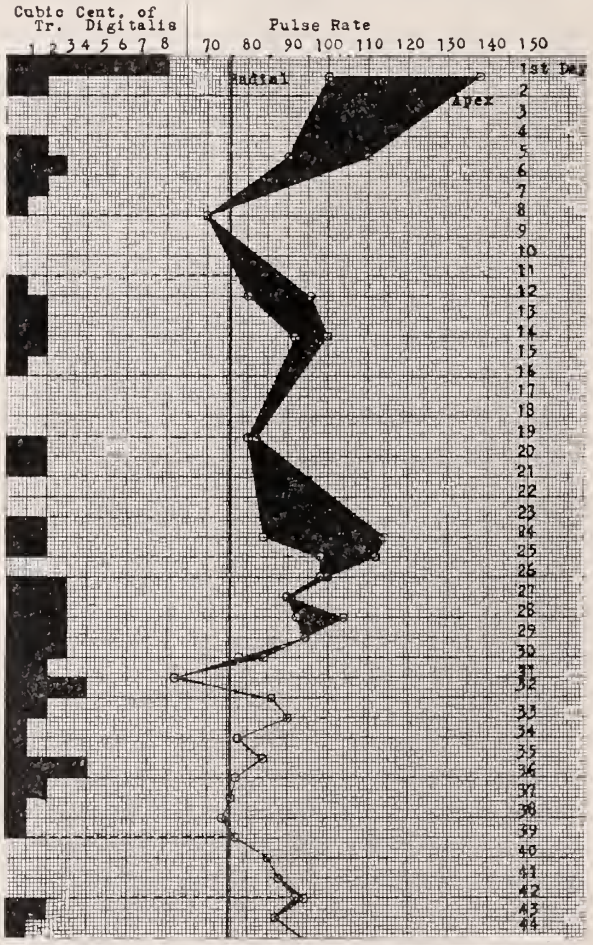

Fig. 2. (Case 1) The physiologic effect of the administration of tr. of digitalis is shown. On the eighth day the heart rate is normal and there is no pulse deficit. Immediately upon the cessation of digitalis note the rise in the pulse rate and the appearance of the pulse deficit.

2), the pulse deficit is shown to increase and the pulse rate to rise.

DISCUSSION OF CASES

When digitalis was first applied to case 1, 18 c.c. was sufficient to reduce the heart rate to normal in a period of eight days. Digitalis was then discontinued for three days' time, and one readily sees the result in the rise of pulse and the increase of pulse deficit. The doses administered on the twentieth, twenty-first, twenty-fourth and twenty-fifth days in this case, namely of 4 c.c., were not adequate to cause a marked effect, but it will be noticed that the heavy dosage which was given from the twenty-seventh to the thirty-second days, namely 18 c.c. in a period of six days, was adequate to again eliminate the pulse deficit and bring the pulse to normal. One can readily picture what the daily dosage of digitalis will approximate for this individual. Two cubic centimeters each day should under constant conditions of rest and exercise keep this patient free from a pulse deficit and her heart near normal.

Case 2 (fig. 3) is a woman of fifty years of age with not such a severe type of auricular fibrillation as that of case 1. The response of this case is demonstrated graphically.

At the present time it seems that this type of individual must take a constant dosage of digitalis every day in order to keep her cardiac mechanism functioning at a normal rate and without showing a pulse deficit.

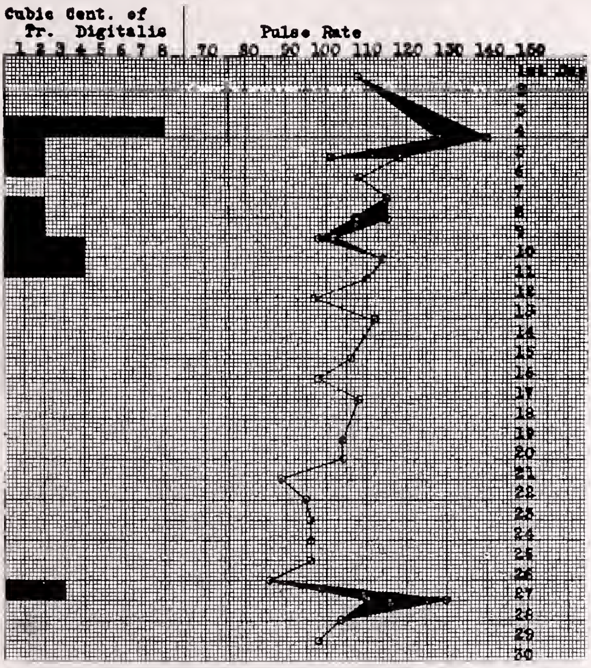

Fig. 3. (Case 2.) Note the rapid elimination on the twenty-seventh day.

THE MEDICAL MANAGEMENT OF GOITER *

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The writer in a statistical report, dealing with the incidence of endocrinopathies in the Puget Sound basin, delivered before the last annual session of The Association for the Study of Internal Secretions, presented his views relative to the goiter problem as follows: "The results obtained in the handling of simple goiter in other parts of the country are such that further neglect in initiating corrective measures in the Northwest is no longer excusable. Especially is this so when we recall, as stated by Marine, that 'simple goiter is the easiest known disease to prevent'." The hope entertained by the writer in presenting his report was the establishment of "prophylaxis in the treatment of simple goiter in the Northwest." Happily the hope of a few months previous is rapidly being fulfilled.

SIMPLE GOITER

The most common good in the handling of the goiter situation is to be expected along the lines of prophylactic therapeutics. The monumental work of Marine and his associates is familiar to all who have interested themselves in the goiter problem. This work has shown beyond peradventure of doubt that simple goiter may not only be prevented but also successfully treated by the administration of iodine in its various forms. The prophylactic and active therapeutic results obtained in the handling of goiter by the feeding of iodine has led, and justly so, to the conclusion that goiter results primarily because of an iodine want. Hence, from the standpoint of practical therapeutics the administration of iodine *en bloc* is, perhaps, too freely looked upon as a sufficient *modus operandi* in the control of goiter.

The proposition, it appears to me, is far from being so easily disposed of. In the final analysis of either the practical or academic consideration of goiter the question of causative factors in the production of an iodine want becomes of first importance. If simple goiter is the direct result of a deficient iodine intake, it then follows that the exhibition of iodine should satisfy that want. However, at the present time we are not permitted such an easy solution of the problem for, if an iodine want continues to exist irrespective of an available iodine supply, it then follows that factors other than the presence or absence of iodine are responsible for the production of goiter. I refer specifically to the works of McCarrison and others who have demonstrated a causative relationship between infection and endemic goiter.

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* Read before the King County Medical Society, Seattle, Wash., Feb. 18, 1924.

Works of this nature have shown that the therapeutic administration of intestinal antiseptics, notably betanaphthol and thymol, is capable of causing the disappearance of recent goiters in the young subject. Further, the restitution of the normal drainage of the bowel in persons, suffering from chronic constipation and intestinal stasis associated with goiter, causes the disappearance or marked reduction in the size of the goiter. Goiter has been produced experimentally in rats and goats by feeding them on fecal material from goiterous and non-goiterous subjects or by feeding them on cultures made from similar sources grown under aerobic and anaerobic conditions. Congenital goiter and cretinism have also been produced experimentally in the offspring of such animals by the continued feeding of the mothers thruout pregnancy with these cultures. So also, as shown by Marine, the addition of pure water, or iodine, mercuric chloride, or arsenic to the tanks containing fish retards or prevents the onset of thyroid hyperplasia, and may cause its disappearance in cases where it has arisen. The fact that goiter has been experimentally produced in the human subject by the ingestion of the residue left on the candle of a Berkefeld filter after filtration of goiterous water is, it appears to me, sufficient evidence of the importance of considering not only the iodine want but also the possibility of toxic factors when dealing with endemic goiter.

I purposely have raised the question of the etiology of goiter in order to point out a rational means of goiter management. The empirical administration of iodine in the treatment of goiter, while in the main effective, should be paralleled by therapeutic measures directed to the relief of factors now known to result in the production of goiter, namely, infectious processes.

We may justly assume that our local cause of endemic goiter is the result of an iodine want of a purely exogenous nature, i. e., a deficient iodine content of the water and foodstuffs. Local therapeutic measures, therefore, should consist primarily in supplying iodine in amounts sufficient to maintain a normal thyroid metabolism and secondarily in the removal of infectious processes.

The manner of supplying iodine either in a prophylactic or active therapeutic way is simply a matter of convenience or choice. Prophylactic management may successfully be carried out on a large scale by the addition of iodine to the water supply. Certainly this method appeals as the most feasible in the handling of a situation as it exists in the city of Seattle. A second general method is the use of iodine in such a form as to make it widely applicable and at the same time remove the odium of medicine taking, namely, iodine in conjunction with table salt. Such a preparation is on the market under the trade-name of nu-sale (Eli Lilly & Co.) This preparation contains one and two-fifths grains of sodium iodide (0.02 per cent) per pound of sodium chloride. This preparation, if used on the table and in the cooking, should furnish sufficient iodine to supply a diet deficient in iodine.

Measures such as those just mentioned are more or less indefinite as to possible results because of the variations in the habits of individuals in the utilization of water and salt. To offset such difficulties the direct administration of iodine is indicated. At the present time various preparations of iodine for the prophylactic and active treatment of goiter are available. For instance, oridin (organic iodine) tablets prepared by Eli Lilly & Co. each contain 6 mg. of iodine. One of these tablets may be given two or three times daily until forty such are taken. Such a course should be taken at least twice a year. The Hoffmann-La Roche Chemical Works have a similar tablet, known as iodostarine (tararic acid di-iodide), which contains 10 mg. of iodine. Thyroid extract, thyroxin, soluble iodine such as that of Burhnam, and sodium iodide are also available and may be administered as seen fit by the physician.

Marine sets forth as an adequate prophylactic public health measure the administration of 2 grams (30 grains) of sodium iodide in divided doses over a period of two weeks to the school population between the ages of 11 and 17 years, such a procedure to be carried out twice yearly. According to Marine such a procedure does not lead to the production of exophthalmic goiter. However, in patients possessing nontoxic adenomatous goiter, according to the workers at the Mayo Foundation, such a procedure initiates toxic symptoms which are not relieved by the withdrawal of the drug.

According to Boothby, the dried thyroid gland or thyroxin have proved as reliable in the treatment of goiter as sodium iodide and avoids the danger of initiating thyrotoxicosis, if adenomatous tissue is present. To quote this author: "The intravenous injection of 5 mg. (one-twelfth grain) of thyroxin will usually cause a large colloid goiter with thrills and bruits to decrease materially in size with cessation of the thrills and bruits within 12 to 24 hours. Subsequently the daily oral administration of approximately 0.15 to 0.3 grams (2 to 4 grains) of dessicated thyroid or 1.6 mg. (1-36 grain) of thyroxin will usually keep the thyroid relatively small, altho reduction to normal size is not always possible. The dosage of dried thyroid gland or thyroxin should be controlled by frequent determinations of the basal metabolic rate, because in these patients thyroid preparations are often only partially absorbed."

It has been my experience that the administration of iodine to patients with cystic goiter is followed by undesirable results.

The external application of iodine preparations for the relief of goiter appears as unnecessary. However, I do not mean by this statement that such a method of medication is without definite therapeutic results. The painting of the skin over the gland with a tincture of iodine is subjectively undesirable; further, the repetition of such paintings often leads to a dermatitis. These objections are largely overcome by the use of the unguentum iodi, U. S. P., which is a 4 per cent noncoloring iodine preparation. The preparation iodopetrogen, a 5 to 10 per cent ointment, is also available. If such preparations are those of choice, I see no reason to believe, save for the effect of suggestion, that massage of such medicaments over the skin covering the thyroid gland is of any more direct benefit than its application to any other skin surface.

The direct injection of iodine preparation into the thyroid gland appears to be an utterly unnecessary procedure. This sentiment, while not the result of an attempt to treat goiter in this matter, follows because of the consequences observed in two patients who underwent such treatment.

The management of nontoxic goiter is primarily the duty of the internist. However, the cooperation of the surgeon is necessary at times, especially in the handling of goiters of great and progressive deformity, malignant growths, thoracic goiters and those causing pressure symptoms.

ADENOMATOUS GOITER

The suggestion of Coindet that iodine be administered for the reduction of adenomatous goiter is now in just disrepute, for the reason that in the later stages of adenomatous goiter the use of iodine in any amount frequently results in thyrotoxicosis; namely, the syndrome of toxic adenoma. So frequently was this situation observed in Switzerland that Kocher vigorously warned against its danger. Even at the present time this danger is not fully appreciated, as evidenced by the number of cases that develop toxic symptoms, following the use of iodine during the period of puberty and early adulthood. Plummer, in discussing the treatment of adenomatous goiters, states that "The administration of iodine for a few days or weeks to persons over 30 years of age having adenomatous goiter often initiates hyperthyroidism. Once initiated by an excess of iodine, the hyperthyroidism will continue for months or years. Nearly 50 per cent of the rare cases of hyperthyroidism associated with adenoma of the thyroid, that have come under our observation before the twentieth year of life, have followed the administration of iodine."

Possibly the best results in the treatment of nontoxic adenomatous thyroids follow the administration of thyroid extract or thyroxin in subjects showing a reduced basal metabolic rate. A reduction in the size of the goiter may follow the intravenous injection of 5 mg. (one-half grain) of thyroxin. The subsequent daily oral administration of 2 to 4 grains of thyroid extract may result in an appreciable decrease in size. According to Boothby, the most rapid effect is obtained by regulating the dosage so that the basal metabolic rate is raised about 10 per cent.

Because of the results obtained thru the prophylactic treatment of simple goiter there has arisen, and that recently, an appreciation of the possibilities of similar procedures in the prevention of toxic goiters. While it is not the purpose of this paper to enter upon the subject of the treatment of toxic goiter, nevertheless it appears as pertinent to consider briefly certain correlations between simple and toxic goiters.

At the present time opinions as to the proper handling of toxic goiters are analogous to those pertaining to peptic ulcers. It is true that surgical intervention gives a high percentage of excellent results. Medical treatment is just as successful. It is also true that spontaneous cures occur which are, to all intents and purposes, as successful as either the knife or the prescription. The handling of either peptic ulcers or toxic goiters is not only an isolated medical problem but also an economic and social problem, and as such must be so considered.

Goiter statistics show that in regions of simple endemic goiter there is a high incidence of toxic goiter. For instance, the correlation coefficient of simple and toxic goiter for the total number of cases of goiter of both types appearing in approximately two and one-half million men drafted for service in the U. S. forces was 73. The actual figures as published are as follows: simple goiter 11,971 (ratio 4.35 per 1,000 men); toxic (exophthalmic) 8,647 (ratio 3.14 per 1,000 men). Such a correlation coefficient, it appears to me, can be interpreted as indicative of a close relationship in the factors responsible for the appearance of both toxic and nontoxic goiters.

Serious thought as to the etiology of toxic adenomatous goiter leaves one in a frame of mind similar to that produced by consideration of the cancer problem. "The appalling increase in the incidence of cancer" may be looked upon as nothing more than the end result of saving the babies and the prolonging of life; that is, more individuals have been spared to the cancerous age. So with adenomatous goiters; an early iodine deficiency plus an adenomatous growth plus age, or a simple goiter plus an adenomatous growth plus age and iodine often results in the appearance of toxic adenomatous goiters. To restate the same thought. The development of adenomatous goiters may be at least partially prevented by the exhibition of iodine during life's tender years, reduced with thyroid preparations with some degree of success in early adult life, and thrown into destructive activity by the administration of iodine.

I have dwelt upon this subject at some length, hoping thereby to point out the necessity of care with which such an apparently simple condition as goiter should be handled. The high correlation coefficient of toxic to simple goiter, to me, indicates the necessity of careful observations and cautious therapeutic measures in the handling of the goiter patient. Further, it becomes continually more apparent that careful observations on the relation of simple to toxic goiters are necessary in order that, in the future, a definite prophylaxis against toxic goiter may become feasible. The fact that iodine acts as a specific measure in controlling simple goiter and the fact that the incidence of toxic goiters is high in regions of endemic simple goiter points to a rather definite correlation between iodine and goiters of both toxic and nontoxic types. Such an assumption, while quite apparent, is not entirely justified for, as already pointed out, there exists the necessity of establishing a rational explanation of perverted thyroid metabolism in the presence of available iodine.

CRETINISM

The institution of the prophylactic treatment of endemic goiter will go far to reduce the incidence of cretinism, for it appears as a truism that this condition results because of progressive characteristics in the offspring, due to the absence of available iodine in the immediate ancestry.

Marine has shown that the low iodine content of water and foods is significant in the causation of both endemic goiter and cretinism. On the other hand, McCarrison has shown the importance of the bacterial pollution of water as a causative agent in the production of goiter. Plummer in attempting to correlate these two lines of evidence suggests as an adequate hypothesis that there is a deficiency of iodine in the food and water, combined with gastro-intestinal bacterial flora, that have a high iodine affinity, thus preventing iodine absorption thru the body and the manufacturing of a normal thyroid secretion.

A guarded prognosis should be given in relation to the therapeutic possibilities of success in the handling of cretins because of the inability to alter or replace organic harm that may have been produced by the absence of iodine at some critical stage of development. That is, iodine medication will no more cure the morphologically altered cretin than it will a toxic adenomatous goiter. This statement, however, should not be interpreted as a criticism of the therapeutic use of iodine in the handling of cretins for no more brilliant results are obtainable than those following the proper handling of these subjects.

In addition to cretinism there is a large number of children in and about Seattle who are suffering from hypothyroidism. The feeding of iodine or thyroid extract to such children is an almost specific therapeutic measure.

CONCLUSION

This paper is offered in the spirit of full cooperation with the movement for the prophylactic treatment of simple goiter. Aside from this I have attempted only to offer an evaluation of such therapeutic measures as are available in such an undertaking. The apparent criticisms of such a procedure as the general prophylactic treatment of goiter have not been made with any intent to decrease the zeal with which the profession is attacking the local situation, but rather to call attention to the possible pitfalls into which iodine therapy may fall clinically.

MALIGNANCY OF THYROID GLAND *

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TACOMA, WASH.

Recently Meleney of Pekin, China, has well said, "The thyroid gland continues to claim the interest of many branches of medicine, because of the secrets still hidden in its physiology and pathology." The significance of this statement is very apparent to the surgeons of the Pacific Northwest. The things of nature in this region that give us rest and enjoyment, to others produce deformity, and later a final infirmity, one of the freaks of nature that is hard to understand.

It is interesting in plant life that certain species of sea weed fortunately seem to have the power to assimilate or remove iodine from the water, and use it as a constituent in the complex organic compound which they contain. It is equally interesting in animal life that certain species have the power to extract from the various food sources sufficient iodine and use it in thyroid chemistry in an equally complex organic arrangement. The human family, like some of these species of plants, has certain individuals with peculiar traits, characteristic of themselves, who, when subjected to a diet of a goiterous district, show enlargement of the thyroid gland.

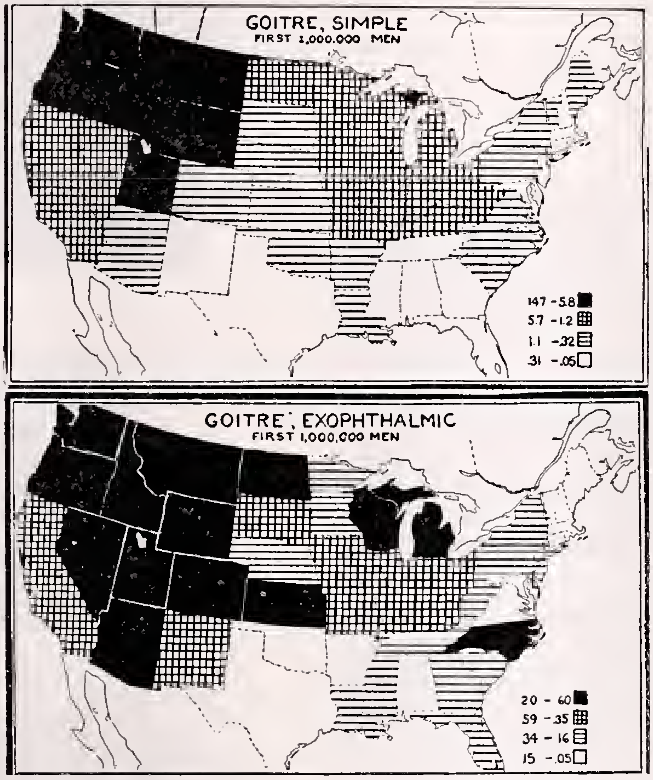

Fig. 1. Upper, map of the United States, showing by states the varying incidence of smple goiter, as found at mobilization camps in the rst million men. In this "simple" group malignancy is said to occur frequently. Lower map, showing varying incidence of exophthalmic goiter, which is more diffuse than the simple group. Here malignancy is rare.

To any careful observer it would appear that the chemical treatment alone decides the issue of the thyroid gland; especially does chemical irritation play an important part in the causation of malignancy. There is general belief that malignant tumors of the thyroid are extremely rare, when in fact they are of quite frequent occurrence, if we are on the lookout for them. There is, too, a common belief that malignancy found in the liver, lungs or spine is primary, merely because these organs manifest themselves early by a group of stormy symptoms.

The result of the physical examination of the first million recruits, recorded by the United States Surgeon General's office (fig. 1), cannot fail to impress the surgeon of the Northwest and elsewhere that we are living in the center of the goiter stage of the world and it bids fair to hold this position for all time. One cannot help but be convinced that, were we to examine these pioneers of our western mountains and valleys, we would have found another regional feature, the frequency of malignancy in the Northwest, the age incidence the greatest from the fifth to the seventh decade.

Wilson, of the Mayo Clinic, called our attention to the fact that American Surgeons were failing to report malignant tumors of the thyroid gland. Only 971 malignant tumors had been reported by them up to August, 1921.

For many years I have personally expressed the opinion that the surgeons of the Northwest, doing surgery, as it were, in the world's greatest goiter amphitheatre, are not finding malignancy as often as it occurs. By personal and written communication I have inquired of many surgeons, doing goiter surgery in the Northwest, relative to the frequency of malignancy of the thyroid. The data are interesting, and year by year, changing. The

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* Read before the Twelfth Annual Meeting of North Pacific Surgical Association, Seattle, Wash., Dec. 7-8, 1923.

reports have been as follows:

Seattle. 1-250.
Vancouver, B. C., (a) 1-250, (b) 1920-21, 1-95.
Portland, 1-300.
San Francisco, 2-211.
Tacoma, 1-100.
Mayo Clinic, 1-297. Crile, 2 per cent or, to be exact, 80-3100.

Hunt, whose surgical practice is limited to surgery of the thyroid, found among his operations, which were determined to be definitely malignant, a little over 1 per cent. However, recently four cases were found that were positively malignant, in a period of two months. Like surgery of the prostate gland, as one draws surgery from the class of patients from the fifth to seventh decade, malignancy of the thyroid will be in proportion to advanced age, All of our own cases come from pioneers, beyond the sixth decade and we all know how the pioneer class of patients abhor surgery, doubtless many dying without surgical attention.

A surgeon in my own city, who answered that he had never seen malignancy of the thyroid, had really operated on true malignancy which had been overlooked by him. Only the pathologist and a rapid recurrence, with microscopic examination, convinced him of the real truth of the nature of the growth.

Balfour says in their experience (Mayo Clinic) but 18 per cent were diagnosed clinically as cancer, and in 48 per cent not suspected. If we could exhume some of these old death certificates of the Pacific Northwest, they doubtless should read, "metastatic tumor of the skull, spine and brain, secondary to a malignant thyroid," for metastases to these sites are certainly of frequent occurrence. They so mask the symptoms of the organ primarily affected, that we are psychologically led away from the real seat of trouble.

Twenty-eight per cent of all people from 14 to 30 years of age in the Pacific Northwest suffer from some form of goiter. In the simple, so-called adenomatous group, containing areas of degeneration, malignancy is said to occur, and our pathologic specimens seem to confirm it. We see malignant cells invading the adenomatous field, like hostile, unwelcome immigrants into a defenseless territory. With the approach of old age there are frequent areas of calcification in the thyroid gland. They act as a constant irritant to the thyroid tissue, and any irritant is probably the most causative factor in malignancy. This is shown by the prevalence of so-called carcinoma among trout, especially those kept in artificial ponds and wooden tanks. Any foreign material in the water acts as an irritant to the gills and thyroid tissue, and is followed by progressive degenerative changes, leading to malignancy.

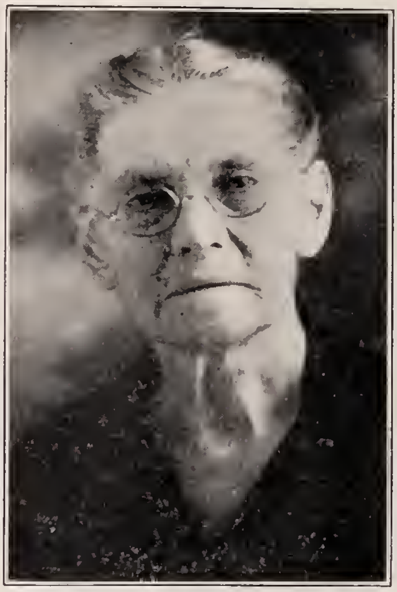

Fig. 2

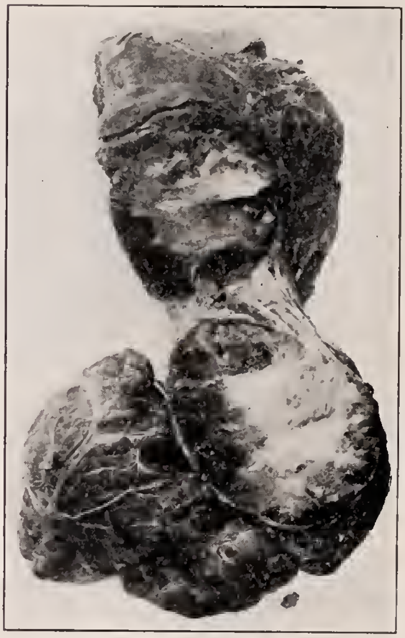

Fig. 3. Sarcoma of thyroid gland. Note light calcified areas surrounded by sarcomatous tissue.

Preexisting goiter is certainly a factor in the development of cancer and sarcoma of the thyroid. In our case of sarcoma a pioneer, sixty-eight years of age (fig. 2), had enlarged thyroid for twenty-six years and for years could distinctly feel hard metallic-like mass, the calcified area, acting as an irritant (figs. 3, 4). This is again confirmed by Balfour, who

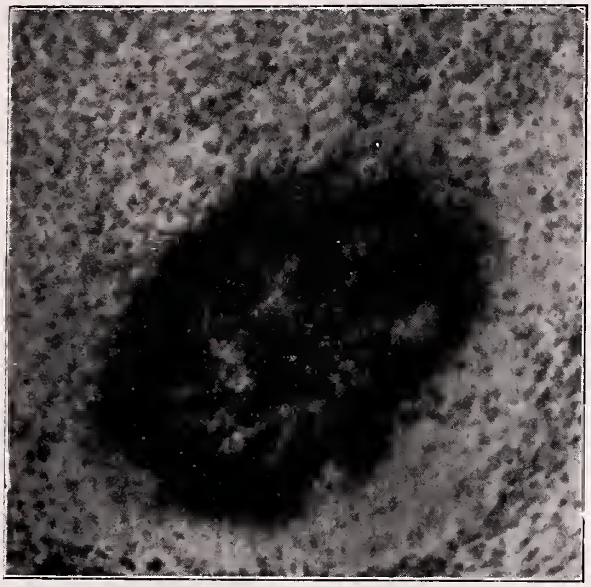

Fig. 4. Microscopic section of calcified area in center of carcinomatous mass.

mentions seven cases, in which malignancy occurred in an enlarged thyroid, that had been treated previously by injections of various irritants, and by the application of absorbents, convincing examples of the fact that chronic irritation is the chief factor in inducing malignancy, and should at least be a warning to those who prove their incompetency by resorting to dangerous methods that surely court disaster to the patient. Speese and Brown found the average time something over twelve years from appearance of goiter to the actual period when true malignancy could be positively diagnosed, so that early removal of the benign lesion would have prevented true cancer.

Malignant tumors of the thyroid, if found within the safe operative period before extracapsular extension of the thyroid cancer, are not as nodular as generally supposed. Each lobe or enlargement of the thyroid is smooth on the external surface. If the capsule has ruptured the surface is rough, the skin and adjoining tissues are adherent. Then you find the nodules external to the superficial and deep fascia of the neck (fig. 5).

Before the rupture of the capsule has taken place, these patients come begging for relief of tension, a pressure pain, a type of neuralgia referred to neck and shoulders. This is too often treated for a time as "rheumatism" and should in every case suggest malignancy of the thyroid.

One of the best guides to correct diagnosis is increase in the size and sudden change in the contour of a long existing thyroid tumor. These patients with malignancy may have many of the cardinal symptoms of toxic goiter. A mixed pathology certainly must be a factor in altering the secretion and is doubtless responsible for a group of symptoms that merit our most careful study.

Occasionally malignant thyroid produces metasis in the intestines (Bennie). The masses appear as polypoid growths, even causing acute intestinal obstruction. So the thought of malignancy secondary to the thyroid should always be borne in mind. Unilateral enlargements of the neck, especially of the cystic type, should make the surgeon consider among other possibilities disease of the lateral aberrant thyroid tissue. In true epitheloma of the thyroid the duration of the symptoms is short. None have run a year, and the local growth is extremely rapid, metastases being few, if any.

In our own cases of malignancy of the thyroid, especially the sarcoma, we could not help being surprised at the limited degree of cachexia, certainly not anything compared to malignancy of the alimentary canal. When the trachea happens to be cemented in a calcified area, it is often thinned out like a ribbon. The patients complain of a group of symptoms of the obstructive breathing type, only too often called asthma.

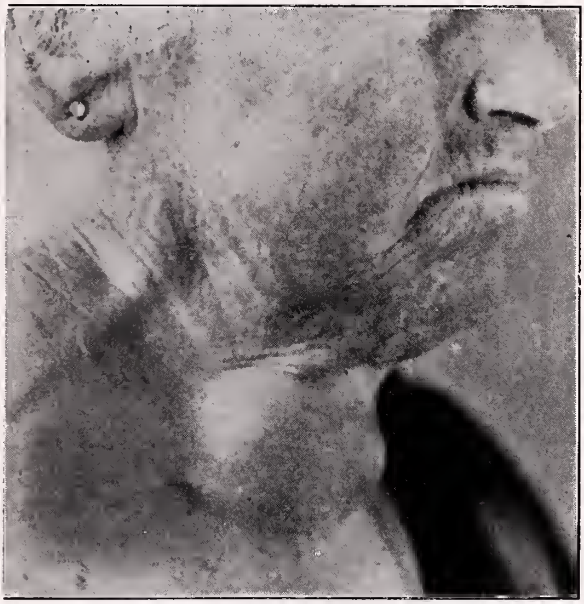

Fig. 5. Malignant recurrence of carcinoma. Note metastatic recurrence external to sternothyroid and sternohyoid muscles.

Any surgeon of the Pacific Northwest, who has seen a large number of fractures, cannot help but notice that thyroid disturbances have an important bearing on nonunion and are an occasional factor in causing a form of pathologic fracture, resembling the type of specific origin or a form of metastatic tumor. The following case was seen in consultation with Drs. Hicks and Shaefer.

In 1913 she suffered a fracture of left femur, a result of a fall on a rug in her house. In 1918 she fractured the right femur, as a result of a fall off a step eight inches high. On Feb. 1, 1921, she again tripped on a rug and fractured the left femur, some inches above the lower end of the old plate, which had never been removed. The old plate was taken out and a new one applied, but always with a limited degree of union and quite marked deformity. One would naturally think of syphilitic condition or a metastatic tumor. However, her blood and spinal fluid were negative, a number of times by different laboratories.

She had a large cystic adenomatous goiter, causing quite a marked degree of pressure and a metabolic rate of +37. She had had the goiter for many years, and it was considered quite innocent by herself and also by the attending physicians and surgeons who attended her early fractures. I recommended early removal of her cystic adenomatous thyroid. This was done by Dr. Shaefer and myself. The specimen showed an unusual area of adenomatous degeneration all over the posterior surface of the gland, but not malignant. Immediately following operation for goiter, the union in her femur was perfect, her general appearance improved. In fact she looked as if she had drunk freely from the fountain of youth. It was doubtless some circulatory disturbance of the parathyroid glands.

In the June, 1922, issue of *Hospital Progress* I passingly mentioned this case. Dr. Bloodgood picked up the case, after quite extensive correspondence. It was his opinion that we were not dealing with a metastatic tumor, but with some disease of the skeleton associated with goiter.

Zadek reports a pathologic fracture of the neck of the femur, due to thyroid metastasis and quotes Blumer who states, "The thyroid tumors which give rise to bone metastasis present some very marked pecularities. While some of them are very evidently malignant, judged from their clinical manifestations alone, others show none of the ordinary evidences of malignancy. An analysis of sixty cases from the literature shows that two-thirds of the thyroid metastases occur in women, and 90 per cent of the cases are between the ages of thirty and seventy. No obvious clinical involvement of the thyroid is present in at least 25 per cent of the cases." I believe time will doubtless show that in many of the pathologic fractures we are not dealing with metastatic tumor but a disturbed internal secretion.

It is apparent that in such a disease or disturbance an absence of an internal secretion, which has such marked influence over our human masonry that the once sound structural skeleton suddenly crumbles under this persistent and continuous attack of our calcium center. Langham's reasoning is well grounded in believing that the real growth originates in fetal cells, which remain latent for many years until the proper irritant is added which produces activity in growth.

The more one sees of malignancy of the thyroid it creates in the surgeon an urgent desire to disseminate among general practitioners and laity, the fact that benign lesion of the thyroid gland can be easily and safely removed, while the ordinary goiter, long neglected, may suddenly become malignant. Then early extirpation of the malignant growth must be done before the capsule has ruptured. We should heartily recommend early removal of any goiter growth that shows induration, accompanied by areas of calcification and degeneration.

Regardless of metastases in distant organs, unless at the very terminal period, repeated operations are justifiable to keep the steadily progressive malignant growth from encroaching upon the trachea, and causing death by suffocation.

In the type of goiter, where the trachea happens to be located between two or more calcified areas, it is often thinned out, ribbon-like, the tracheal rings are flattened, collapse of the trachea is likely to occur during operation. Another feature is that to touch the calcified masses feel like trachea and, when severed transversely, the lumen with a distinct calcareous rim looks exactly like trachea. It is well to bear these points in mind, when operating on this type of goiter. It may probably prevent a fatal shock to the patient, and shell shock to the surgeon.

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❦

ROENTGEN FINDINGS IN A CASE OF CONGENITAL OBSTRUCTION OF THE MEDIAN BASILIC VEIN AND THE DEEP AXILLARY LYMPH CHANNELS.

FREDERICK E. DIEMER, M.D.,
and
FRANK E. BUTLER, M.D.

PORTLAND, ORE.

Mr. A. D., age 23, referred by Dr. C. R. Freeland, came for examination Nov. 1, 1923, complaining of an extremely enlarged left arm.

Family history negative. At birth he was well developed but had telangiectatic spots along the inner side of and on the left chest. At this time his mother noticed a small moveable tumor about the size of a five cent piece on dorsum of hand. The hand was normal but it was observed to grow in size rapidly during the first eight or nine months. Mother believes that arm enlarged from hand upward. At the age of four the arm had enlarged progressively and was tense and swollen, with several foul smelling discharging ulcers present on the chest along edge of discoloration. He never complained of pain except when handled roughly on involved side.

Examination revealed a man of normal stature but with an appearance of anemia. The left arm was very large, hardened and thickened, with the third, fourth and fifth fingers pudgy and distended. The thumb and forefinger were almost normal. The enlargement terminated abruptly near the junction of the upper and middle third of the humerus. On the inner side of the arm were large cavernous tortuous veins. There were several large warty growths on the dorsal side of the hand. The arm was elongated and very heavy. The thumb and forefinger could be moved voluntarily but the others could not. This was obviously due to the fact that the obstructing agent envolved the medium basilic veins and deep lymph channels and the median cephalic was only slightly involved if at all. There was a discharging ulcer near the wrist on the dorsum. Neither the radial nor the ulnar artery could be palpated. A distinct loud bruit could be heard and felt along the axillary artery. There were telangiectatic areas (not extensive) over the left chest. There was no complaint of pain, tenderness or numbness.

The hypostasis, the cavernous veins, the bruit and the history of ulceration along the border of the discolored area on the left chest at the age of four, immediately suggested arteriovenous aneurism but the elephantiasis could not be accounted for thus, unless the deep lymphatics on the axillary side were obstructed. This latter was especially obvious, since the lymphatic drainage over the outer side of the arm was not obstructed or only slightly so, the thumb and first finger being almost normal in size and moveable voluntarily.

We considered it was very possible that such a congenital aneurism could exist and that tissues could be in such a state that obstruction of the deep chain of lymphatics might exist. The hypostasis could exist because of lymphatic obstruction alone. The cavernous vein and the bruit might be caused by obstruction of vein and artery by the same agent causing the lymphatic obstruction. The ulceration about the border of the discoloration on the chest

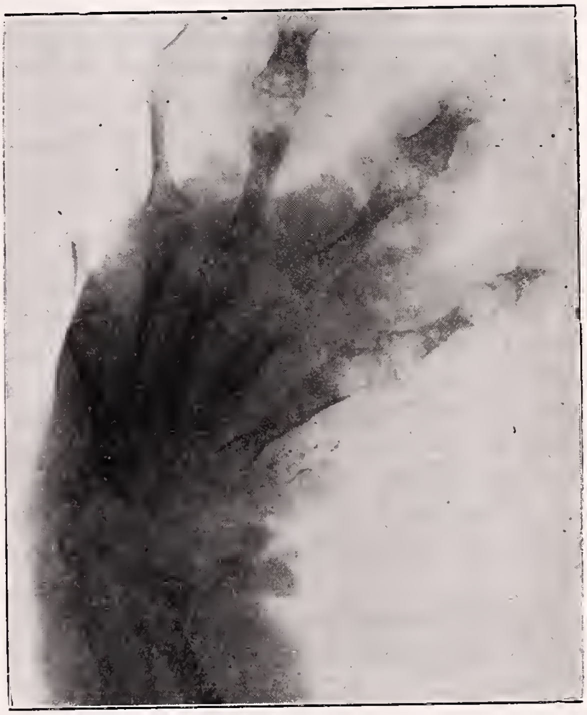

Fig. 1. The bones of thumb and index finger are normal. The other fingers present bone changes.

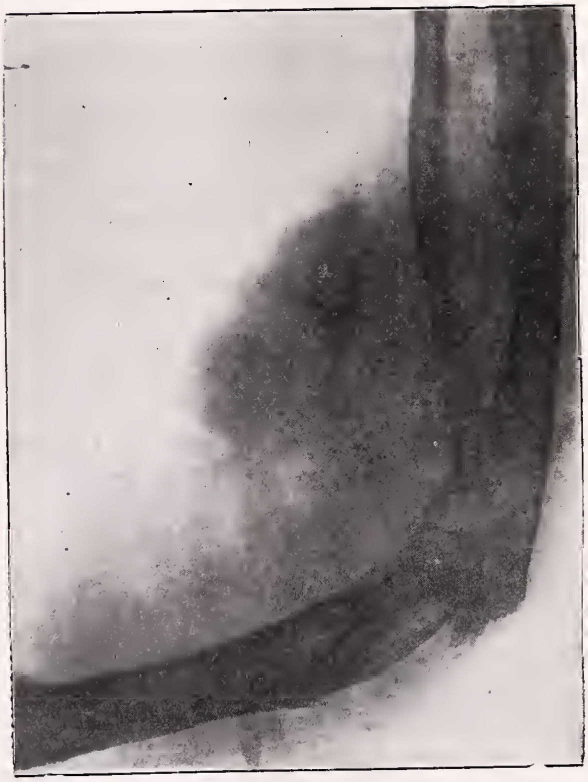

Fig. 2. Proliferating bone changes and deposit of bone salts along course of the lymphatics.

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* Read before Staff of U. S. Veterans Hospital No. 77, Portland, Ore., Feb. 25, 1924.

might be caused by inadequate return lymphatic drainage and, therefore, we considered the case principally one of obstruction of the deep lymphatics on the axillary side, particularly because of the bone phenomna presented by roentgen study.

Consequently the following report was rendered:

Diagnosis from an x-ray standpoint is blocking, especially of the deep lympth channels on the axillary side of the arm, in the neighborhood of the junction of the upper and middle third.

The reason we think there is more blocking of the axillary than the outer side is because of the fact that the thumb and index finger are drained over the outer side of the arm, and these fingers show very little change; in fact, they show practically no bone changes, while the other fingers all show very definite bone changes. Also the cavernous dilated blood vessels on the inner side of the arm suggest that this obstruction is on the axillary side.

The bone changes are definite indeed, showing very distinct atrophy as well as some proliferative periostitis. There are lime salt deposits thruout the soft tissues, the result probably of demineralization of the bone and redeposition of the calcium salts in the soft tissues along the courses of the lymphatics.

The accompany illustrations present the boney changes (figs. 1 and 2).

We wish to present the above case for three reasons:

1. The rarety of elephantiasis of the upper extremity.
2. The obvious obstruction of the deep axillary lymph chain with little or no involvement of the outer deep lymphatics.
3. Because of the rarity of bone changes and the deposit of bone salts along the course of the lymphatics, due to obstructed venous and lymphatic channels.

ETHYLENE. ITS VALUE IN RELATION TO OTHER ANESTHETIC AGENTS *

John S. Lundy, M.D.
SEATTLE, WASH.

This paper deals only with a brief, practical consideration of ethylene anesthesia. The history and laboratory experiments connected with this subject may be read in the current literature. Its value in relation to other anesthetic agents is estimated on a basis of blood pressure records. The keeping of these records, altho seldom done, is the most crucial method of testing the value of the gas as an anesthetic agent. Reports of large series of cases will soon be available from such cities as Chicago, Toronto, New York, Baltimore, Rochester, Minn., St. Louis, San Francisco, Los Angeles, Seattle, Tacoma and many other cities thruout the country. I hope that Portland will soon be on this list. The popularity of ethylene, wherever it has been used; prompts me to recommend it to you who are members of this society. I feel that your city's ordinance, barring ethylene from Portland, unjustly deprives you of a splendid anesthetic agent. A similar opinion was also expressed by those who were present at the clinic and demonstration which was held here this morning by special permission.

Ethylene, or olefiant gas, is made by extracting a molecule of water from alcohol. Its formula is C_2H_4. It is a hydrocarbon gas and a constituent of illuminating gas. It has a pungent, sweetish odor, is inflammable, and quite comparable to ether in these respects. The gas is compressed to a liquid in steel cylinders and is available for use in the same manner as nitrous oxide. Ethylene, in combination with oxygen, is administered by means of a gas machine. It can be used in conjunction with nitrous oxide and oxygen, and to such a combination ether may be added. Ethylene is better than nitrous oxide as a team mate for ether; there is more synergism between the ethylene and ether than between nitrous oxide and ether. Many dual combinations are possible. A preliminary hypnotic is permissible and often desirable. The signs of anesthesia are much the same as when nitrous oxide and oxygen are used.

The Seattle Model of the Gwathmey apparatus is probably the most economical in the amount of gas it uses of any type of machine made at the present time. I get four hours of anesthesia from a two hundred gallon tank of ethylene. The oxygen used costs about fifty cents per hour, making the total charge, as a rule, less than two dollars and a half per hour. Nitrous oxide and oxygen, under the same circumstances and with the same equipment, costs not over two dollars per hours and often less.

Advantages, accompanying ethylene anesthesia, are numerous. Relaxation is usually produced without cyanosis. A greater quantity of oxygen may be given with ethylene than can be administered with nitrous oxide without disturbing anesthesia. One uses practically the same amount of oxygen with ethylene that is used with nitrous oxide and ether. As you know, nitrous oxide and ether requires more oxygen than nitrous oxide alone. Patients are not as prostated nor as exhausted from ethylene as they are from most general anesthetic agents. Consciousness and strength are quickly recovered. The patient's skin usually remains dry, altho rebreathing may produce some sweating. The sweating can be controlled by the administration of atropine. Ethylene is a relatively safe anesthetic agent, altho it may become unsafe when poorly given.

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* Read before Portland City and County Medical Society, Portland, Ore., Feb. 6, 1924.

Disadvantages are few. The principal one is its inflammability which is probably no greater than that of ether. The rebreathing method of application gives the maximum of safety in this respect, as a minimum of gas escapes into the room. The odor is usually considered disagreeable but this may be overcome in different ways. (1) By adding an agreeable scent to the gas as it passes thru the machine; (2) by beginning with a dilute mixture of ethylene and oxygen; (3) by using nitrous oxide and oxygen induction with ethylene-oxygen maintainance. The last method is the best technic and is easily accomplished by using the Seattle Model machine, which was previously mentioned.

Headache, which frequently follows nitrous oxide, is not uncommon after the use of ethylene but is less troublesome with the latter. Nausea and vomiting, following ethylene anesthesia, are also not uncommon, but are usually mild and of short duration. For example, one patient to whom ethylent was given, developed in the first postoperative day, three sudden, severe attacks of headache and dizziness with nausea and vomiting, each attack lasting a few minutes. Respiratory passage irritation is uncommon but there is a slight amout of it with prolonged rebreathing. Occasionally the breath-holding reflex occurs, when a concentrated mixture of ethylene and oxygen is suddenly administered, as after nitrous oxide induction. Altho this reflex is transient, cyanosis may develop and must be avoided.

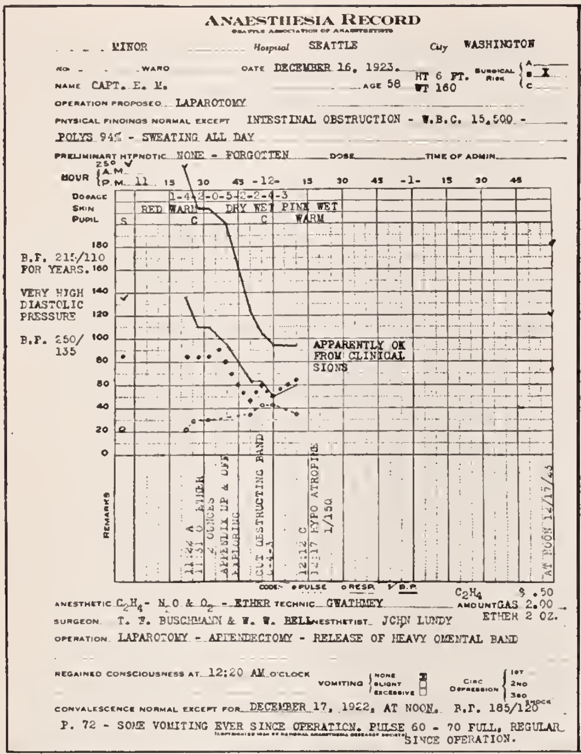
It has been said that there is perhaps more oozing, when ethylene is being given than when other anesthetic agents are used. I am not yet convinced that this is true. In cases where there was profuse oozing, I have changed the anesthetic mixture and have used a number of different combinations without any noticeable effect on the bleeding. In acute peritonitis cases relatively poor relaxation is obtained with ethylene and oxygen only. However, by the addition of a small amount of ether, one-half to one fluid ounce per hour, better relaxation is obtained than with any method other than spinal anesthesia.

My experience is limited to one hundred and thirty-nine administrations of ethylene gas. Out of this series I have made one hundred and thirty-five blood pressure records. These cases were operated upon by fifty-seven different surgeons in eight different hospitals in Seattle. The patients' ages range from sixteen days to eighty-two years. There were no anesthetic fatilities nor near-fatalities. In the series ethylene was used in fifteen or sixteen different combinations such as: (1) Ethylene-oxygen and local; (2) ethylene, nitrous oxide-oxygen and ether; (3) spinal, ethylene, nitrous oxide and oxygen; (4) nitrous oxide induction followed by ethylene and oxygen anesthesia; (5) ethylene-oxygen and ether; (6) ethylene, nitrous oxide and oxygen; (7) ethylene, nitrous oxide, oxygen and local; (8) small amounts of ethylene intermittently during every other combination of anesthetic; (9-16) and each of the eight mixtures with and without morphine. The types of operations were as follows: twelve head, twenty-one neck, four chest, sixty-seven intra-abdominal, eleven extraabdominal, thirteen perineal, and seven long bone cases, three obstetric deliveries and one tonsillectomy. Most of the operations commonly done in the field of general surgery are represented in this series.

Lantern slides of anesthetic records, illustrating many types of anesthesia, will now be shown. Twenty-four out of the sixty-five deal with ethylene. Should you desire to investigate these charts at your leisure, you will find cuts of all of them, except the ethylene records, in the Anesthesia Supplement in *The American Journal of Surgery*, Vol. 38, No. 1, P. 16, Jan. 1924. Those of ethylene for infants can be found in the *Journal of The American Medical Association*, Vol. 82, P. 488, Feb. 9, 1924.

May I call your attention to the fact that, other things being equal, the physiologic reaction of the patients is uniformly similar when the same type of anesthetic is employed. The series has been arranged into groups. Each group deals with one type of operation and is a comparative study of the effect of ethylene, as well as other anesthetic agents in parallel cases. This plan permits you to form your own opinion as to the value of ethylene in relation to other anesthetic agents.

I wish to call your attention to the *peculiar advantage of using ethylene in cases of chronic hypertension.* See figures 1, 2, 3, 4 and 5, not one of which cases was a good risk. Figs. 1 and 2 are favorable cardiac reactions in male and female. Fig. 3 presents mild circulatory depression and weaken-

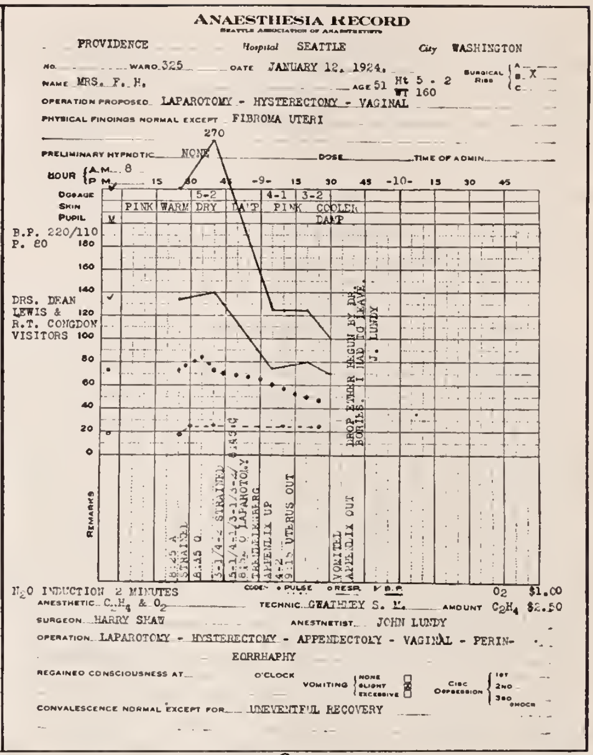


ANAESTHESIA RECORD
SEATTLE ASSOCIATION OF ANAESTHETISTS

MINOR Hospital SEATTLE City WASHINGTON
NO. WARD DATE DECEMBER 16, 1923. HT 6 FT. WT 160 SURGICAL RISK A B X C
NAME CAPT. E. M. AGE 58
OPERATION PROPOSED LAPAROTOMY
PHYSICAL FINDINGS NORMAL EXCEPT INTESTINAL OBSTRUCTION - W.B.C. 15,500 - POLYS 94% - SWEATING ALL DAY
PRELIMINARY HYPNOTIC NONE - FORGOTTEN DOSE TIME OF ADMIN.
B.P. 215/110 FOR YEARS.
VERY HIGH DIASTOLIC PRESSURE
B.P. 250/135
APPARENTLY OK FROM CLINICAL SIGNS
ANESTHETIC C_2H_4 - N_2O & O_2 - ETHER TECHNIC GWATHMEY AMOUNT C_2H_4 $ .50 GAS 2.00 ETHER 2 OZ.
SURGEON T. F. BUSCHMANN & W. W. BELL ANESTHETIST JOHN LUNDY
OPERATION LAPAROTOMY - APPENDECTOMY - RELEASE OF HEAVY OMENTAL BAND
REGAINED CONSCIOUSNESS AT 12:20 AM O'CLOCK VOMITING NONE ☒ SLIGHT ☐ EXCESSIVE ☐ CIRC DEPRESSION 1ST 2ND 3RD SHOCK
CONVALESCENCE NORMAL EXCEPT FOR DECEMBER 17, 1922, AT NOON. B.P. 185/120 P. 72 - SOME VOMITING EVER SINCE OPERATION. PULSE 60 - 70 FULL, REGULAR SINCE OPERATION.

250°
HOUR A.M. P.M. 11 15 30 45 -12- 15 30 45 -1- 15 30 45
DOSAGE 1-4 3-0-5 2-2-4-3
SKIN RED WARM DRY WET PINK WET WARM
PUPIL S C C
180 160 140 120 100 80 60 40 20 0
REMARKS
11:24 A 11:31 O ETHER
2 OUNCES
APPENDIX UP & OFF EXPLORING
CUT OBSTRUCTING BAND 2-4-3
12:12 C 12:17 HYPO ATROPINE 1/150
AT NOON 12/17/23
CODE • PULSE ○ RESP. ✓ B.P.

1

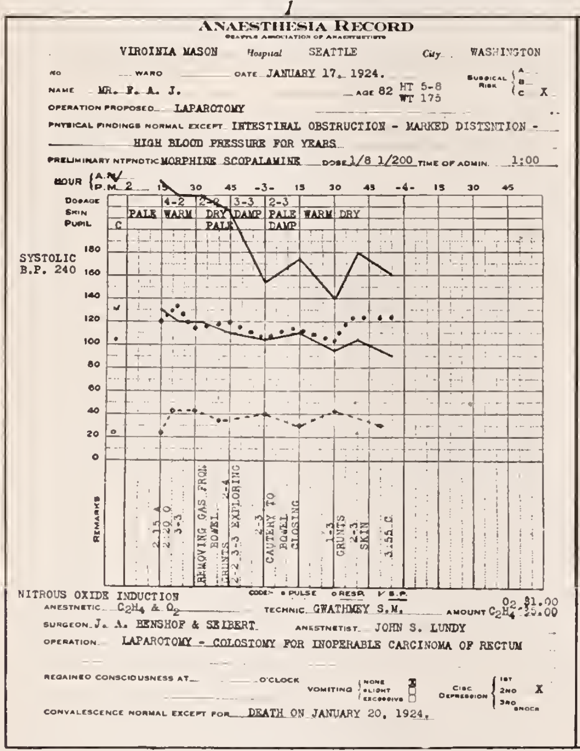


ANAESTHESIA RECORD
SEATTLE ASSOCIATION OF ANAESTHETISTS

PROVIDENCE Hospital SEATTLE City WASHINGTON
NO. WARD 325 DATE JANUARY 12, 1924. Ht 5 - 2 WT 160 SURGICAL RISK A B X C
NAME MRS. F. H. AGE 51
OPERATION PROPOSED LAPAROTOMY - HYSTERECTOMY - VAGINAL
PHYSICAL FINDINGS NORMAL EXCEPT FIBROMA UTERI
PRELIMINARY HYPNOTIC NONE DOSE TIME OF ADMIN.
B.P. 220/110 P. 80
DRS. DEAN LEWIS & R.T. CONGDON VISITORS
DROP ETHER BEGUN BY DR. BORLES. I HAD TO LEAVE. J. LUNDY
N_2O INDUCTION 2 MINUTES
ANESTHETIC C_2H_4 & O_2 TECHNIC GWATHMEY S. M. AMOUNT O_2 $1.00 C_2H_4 $2.50
SURGEON HARRY SHAW ANESTHETIST JOHN LUNDY
OPERATION LAPAROTOMY - HYSTERECTOMY - APPENDECTOMY - VAGINAL - PERINEORRHAPHY
REGAINED CONSCIOUSNESS AT O'CLOCK VOMITING NONE ☐ SLIGHT ☒ EXCESSIVE ☐ CIRC DEPRESSION 1ST 2ND 3RD SHOCK
CONVALESCENCE NORMAL EXCEPT FOR UNEVENTFUL RECOVERY

270
HOUR A.M. 8 P.M. 15 30 45 -9- 15 30 45 -10- 15 30 45
DOSAGE 5-2 4-1 3-2
SKIN PINK WARM DRY DAMP PINK COOLER DAMP
PUPIL M
180 160 140 120 100 80 60 40 20 0
REMARKS
8:25 A STRAINED
8:35 O
3-1/4-4 STRAINED
5-1/4-1/3-1/3-4 8:43 C LAPAROTOMY TRENDELENBERG
APPENDIX UP 4-2
9:15 UTERUS OUT
VOMITED APPENDIX OUT
CODE • PULSE ○ RESP. ✓ B.P.

2

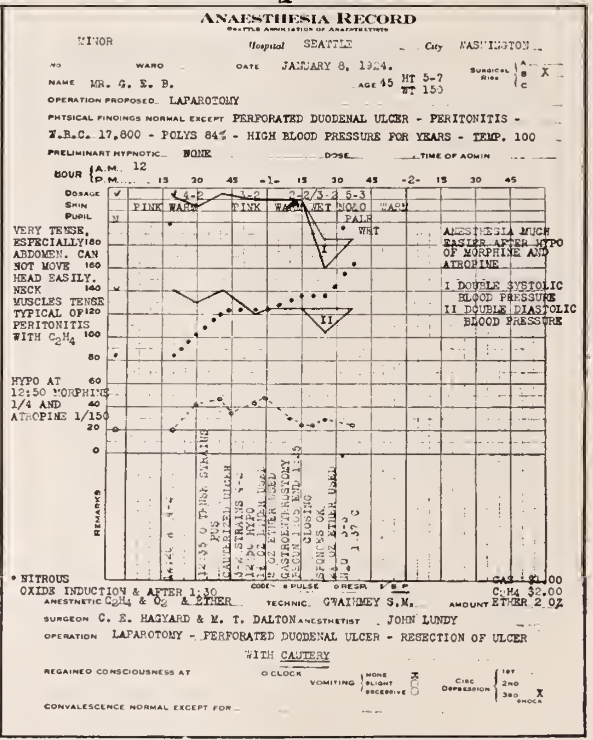


ANAESTHESIA RECORD
SEATTLE ASSOCIATION OF ANAESTHETISTS

VIRGINIA MASON Hospital SEATTLE City WASHINGTON
NO WARD DATE JANUARY 17, 1924. HT 5-8 WT 175 SURGICAL RISK A B C X
NAME MR. F. A. J. AGE 82
OPERATION PROPOSED LAPAROTOMY
PHYSICAL FINDINGS NORMAL EXCEPT INTESTINAL OBSTRUCTION - MARKED DISTENTION - HIGH BLOOD PRESSURE FOR YEARS
PRELIMINARY HYPNOTIC MORPHINE SCOPALAMINE DOSE 1/8 1/200 TIME OF ADMIN. 1:00
SYSTOLIC B.P. 240
NITROUS OXIDE INDUCTION
ANESTHETIC C_2H_4 & O_2 TECHNIC GWATHMEY S.M. AMOUNT O_2 $1.00 C_2H_4 $25.00
SURGEON J. A. BENSHOF & SEIBERT ANESTHETIST JOHN S. LUNDY
OPERATION LAPAROTOMY - COLOSTOMY FOR INOPERABLE CARCINOMA OF RECTUM
REGAINED CONSCIOUSNESS AT O'CLOCK VOMITING NONE ☒ SLIGHT ☐ EXCESSIVE ☐ CIRC DEPRESSION 1ST 2ND X 3RD SHOCK
CONVALESCENCE NORMAL EXCEPT FOR DEATH ON JANUARY 20, 1924.

HOUR A.M. ✓ P.M. 2 15 30 45 -3- 15 30 45 -4- 15 30 45
DOSAGE 4-2 2-2 3-3 2-3
SKIN PALE WARM DRY PALE DAMP PALE DAMP WARM DRY
PUPIL C
180 160 140 120 100 80 60 40 20 0
REMARKS
2:15 A 2:20 O 3-3
REMOVING GAS FROM BOWEL GRUNTS 2-4
2-2 3-3 EXPLORING
2-3 CAUTERY TO BOWEL CLOSING
1-3 GRUNTS 2-3 SKIN
3:55 C
CODE • PULSE ○ RESP. ✓ B.P.

3



ANAESTHESIA RECORD
SEATTLE ASSOCIATION OF ANAESTHETISTS

MINOR Hospital SEATTLE City WASHINGTON
NO WARD DATE JANUARY 8, 1924. HT 5-7 WT 150 SURGICAL RISK A B X C
NAME MR. G. E. B. AGE 45
OPERATION PROPOSED LAPAROTOMY
PHYSICAL FINDINGS NORMAL EXCEPT PERFORATED DUODENAL ULCER - PERITONITIS - W.B.C. 17,800 - POLYS 84% - HIGH BLOOD PRESSURE FOR YEARS - TEMP. 100
PRELIMINARY HYPNOTIC NONE DOSE TIME OF ADMIN
VERY TENSE, ESPECIALLY ABDOMEN. CAN NOT MOVE HEAD EASILY. NECK MUSCLES TENSE TYPICAL OF PERITONITIS WITH C_2H_4
HYPO AT 12:50 MORPHINE 1/4 AND ATROPINE 1/150
ANESTHESIA MUCH EASIER AFTER HYPO OF MORPHINE AND ATROPINE
I DOUBLE SYSTOLIC BLOOD PRESSURE
II DOUBLE DIASTOLIC BLOOD PRESSURE
• NITROUS OXIDE INDUCTION & AFTER 1:30
ANESTHETIC C_2H_4 & O_2 & ETHER TECHNIC GWATHMEY S.M. AMOUNT GAS $1.00 C_2H_4 $2.00 ETHER 2 OZ
SURGEON C. E. HAGYARD & M. T. DALTON ANESTHETIST JOHN LUNDY
OPERATION LAPAROTOMY - PERFORATED DUODENAL ULCER - RESECTION OF ULCER WITH CAUTERY
REGAINED CONSCIOUSNESS AT O'CLOCK VOMITING NONE ☒ SLIGHT ☐ EXCESSIVE ☐ CIRC DEPRESSION 1ST 2ND 3RD X SHOCK
CONVALESCENCE NORMAL EXCEPT FOR

HOUR A.M. 12 P.M. 15 30 45 -1- 15 30 45 -2- 15 30 45
DOSAGE ✓ 4-2 3-2 2-2/3-2 5-3
SKIN PINK WARM PINK WARM WET COLD PALE WET WARM
PUPIL N
180 160 140 120 100 80 60 40 20 0
I
II
REMARKS
12:35 O THEN STRAINS PUS
CAUTERIZED ULCER
3-4 STRAINS
12:50 HYPO
1 OZ ETHER USED
GASTROENTEROSTOMY BEGUN 1:05 END 1:45
CLOSING
SPONGES OK.
1/4 OZ ETHER USED
1:37 C
CODE • PULSE ○ RESP. ✓ B.P.

4

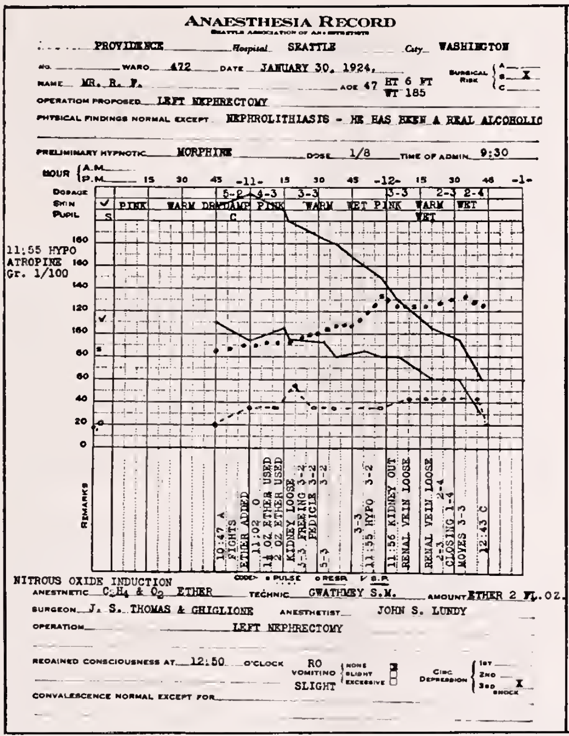
Fig. 1.—Chronic hypertension in a man. Pulse rate and blood pressure fall simultaneously. A favorable prognosis.

Fig. 3—An old man. A fall in blood pressure without a fall in pulse rate. An unnatural cardiovascular balance. Death was in no way due to the anesthetic. Life was longer than it would probably have been with another type of anesthesia.

Fig. 2—Same as figure 1, except that the patient was a woman.

Fig. 4—A gradually ascending pulse rate with a sustained blood pressure, ending with a temporary decompensation, and mild shock.

ing of cardiac muscle. Fig 4 is mild shock, plus temporary cardiac decompensation, as evidenced by the double systolic and double diastolic pressure curves. Fig. 5 exhibited severe shock developing



ANAESTHESIA RECORD
SEATTLE ASSOCIATION OF ANAESTHETISTS

PROVIDENCE Hospital SEATTLE City WASHINGTON
NO. WARD 472 DATE JANUARY 30, 1924. SURGICAL RISK A — B X C —
NAME MR. R. F. AGE 47 HT 6 FT WT 185
OPERATION PROPOSED LEFT NEPHRECTOMY
PHYSICAL FINDINGS NORMAL EXCEPT NEPHROLITHIASIS - HE HAS BEEN A REAL ALCOHOLIC
PRELIMINARY HYPNOTIC MORPHINE DOSE 1/8 TIME OF ADMIN. 9:30

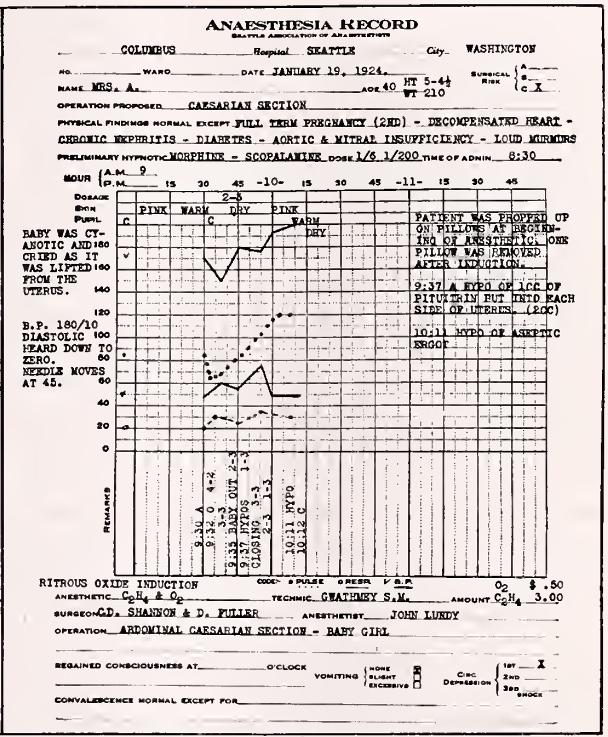
11:55 HYPO
ATROPINE
Gr. 1/100

HOUR A.M. P.M. 15 30 45 -11- 15 30 45 -12- 15 30 45 -1-
DOSAGE 5-2 4-3 3-3 3-3 2-3 2-4
SKIN PINK WARM DRY DAMP PINK WARM WET PINK WARM WET
PUPIL S C WET
160 160 140 120 100 80 60 40 20 0
REMARKS

10:47 A FIGHTS ETHER ADDED
11:02 O
1½ OZ ETHER USED
2 OZ ETHER USED
KIDNEY LOOSE
3-3 FREEING 3-2
PEDICLE 3-2
5-3
3-2
3-3
11:55 HYPO 3-2
11:56 KIDNEY OUT
RENAL VEIN LOOSE
RENAL VEIN LOOSE
2-3
2-4
CLOSING 1-4
MOVES 3-3
12:43 C

NITROUS OXIDE INDUCTION
CODE • PULSE ○ RESP. ✓ B.P.
ANESTHETIC C_2H_4 & O_2 ETHER TECHNIC GWATHMEY S.M. AMOUNT ETHER 2 FL.OZ.
SURGEON J. S. THOMAS & GHIGLIONE ANESTHETIST JOHN S. LUNDY
OPERATION LEFT NEPHRECTOMY
REGAINED CONSCIOUSNESS AT 12:50 O'CLOCK
VOMITING NONE ☒ SLIGHT ☐ EXCESSIVE ☐ RO SLIGHT
CIRC. DEPRESSION 1ST — 2ND — 3RD X SHOCK
CONVALESCENCE NORMAL EXCEPT FOR

5



ANAESTHESIA RECORD
SEATTLE ASSOCIATION OF ANAESTHETISTS

COLUMBUS Hospital SEATTLE City WASHINGTON
NO. WARD DATE JANUARY 19, 1924. SURGICAL RISK A — B — C X
NAME MRS. A. AGE 40 HT 5-4½ WT 210
OPERATION PROPOSED CAESARIAN SECTION
PHYSICAL FINDINGS NORMAL EXCEPT FULL TERM PREGNANCY (2ND) - DECOMPENSATED HEART - CHRONIC NEPHRITIS - DIABETES - AORTIC & MITRAL INSUFFICIENCY - LOUD MURMURS
PRELIMINARY HYPNOTIC MORPHINE - SCOPALAMINE DOSE 1/6 1/200 TIME OF ADMIN. 8:30

BABY WAS CYANOTIC AND CRIED AS IT WAS LIFTED FROM THE UTERUS.

B.P. 180/10 DIASTOLIC HEARD DOWN TO ZERO. NEEDLE MOVES AT 45.

PATIENT WAS PROPPED UP ON PILLOWS AT BEGINNING OF ANESTHETIC. ONE PILLOW WAS REMOVED AFTER INDUCTION.

9:37 A HYPO OF 1CC OF PITUITRIN PUT INTO EACH SIDE OF UTERUS. (2CC)

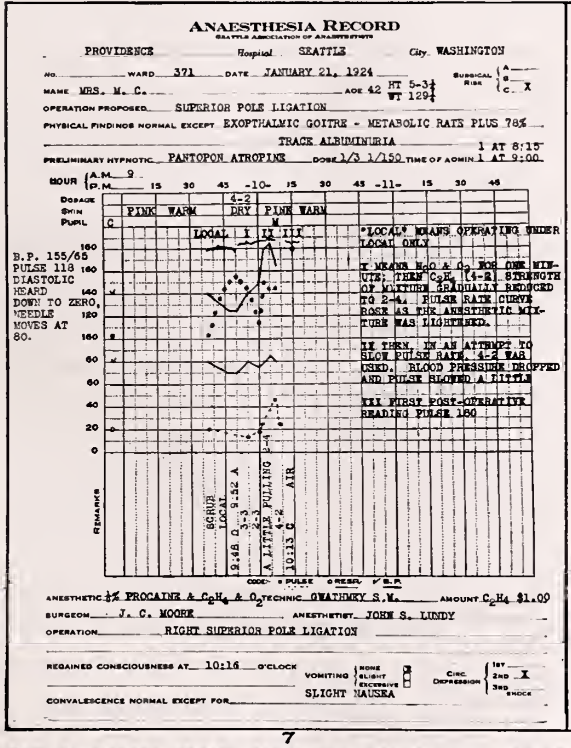
10:11 HYPO OF ASEPTIC ERGOT

HOUR A.M. 9 P.M. 15 30 45 -10- 15 30 45 -11- 15 30 45
DOSAGE 2-3
SKIN PINK WARM DRY PINK WARM DRY
PUPIL C C
160 160 140 120 100 80 60 40 20 0
REMARKS

9:30 A
9:32 O 4-2
3-3
9:35 BABY OUT 2-3
9:37 HYPOS 1-3
CLOSING 3-3
2-3 1-3
10:11 HYPO
10:12 C

NITROUS OXIDE INDUCTION
CODE • PULSE ○ RESP. ✓ B.P.
ANESTHETIC C_2H_4 & O_2 TECHNIC GWATHMEY S.M. AMOUNT O_2 $ .50 C_2H_4 3.00
SURGEON C.D. SHANNON & D. FULLER ANESTHETIST JOHN LUNDY
OPERATION ABDOMINAL CAESARIAN SECTION - BABY GIRL
REGAINED CONSCIOUSNESS AT O'CLOCK
VOMITING NONE ☒ SLIGHT ☐ EXCESSIVE ☐
CIRC. DEPRESSION 1ST X 2ND — 3RD — SHOCK
CONVALESCENCE NORMAL EXCEPT FOR

6



ANAESTHESIA RECORD
SEATTLE ASSOCIATION OF ANAESTHETISTS

PROVIDENCE Hospital SEATTLE City WASHINGTON
NO. WARD 371 DATE JANUARY 21, 1924 SURGICAL RISK A — B — C X
NAME MRS. M. C. AGE 42 HT 5-3½ WT 129½
OPERATION PROPOSED SUPERIOR POLE LIGATION
PHYSICAL FINDINGS NORMAL EXCEPT EXOPTHALMIC GOITRE - METABOLIC RATE PLUS 78% TRACE ALBUMINURIA
PRELIMINARY HYPNOTIC PANTOPON ATROPINE DOSE 1/3 1/150 TIME OF ADMIN. 1 AT 8:15 1 AT 9:00

B.P. 155/65 PULSE 118 DIASTOLIC HEARD DOWN TO ZERO, NEEDLE MOVES AT 80.

"LOCAL" MEANS OPERATING UNDER LOCAL ONLY

I MEANS N_2O & O_2 FOR ONE MINUTE; THEN C_2H_4 (4-2) STRENGTH OF MIXTURE GRADUALLY REDUCED TO 2-4. PULSE RATE CURVE ROSE AS THE ANESTHETIC MIXTURE WAS LIGHTENED.

II THEN, IN AN ATTEMPT TO SLOW PULSE RATE, 4-2 WAS USED. BLOOD PRESSURE DROPPED AND PULSE SLOWED A LITTLE

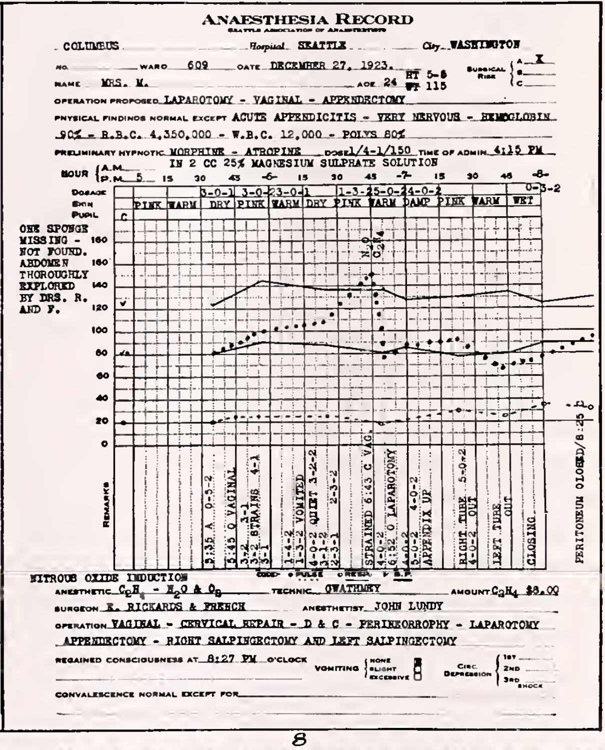
III FIRST POST-OPERATIVE READING PULSE 180

HOUR A.M. 9 P.M. 15 30 45 -10- 15 30 45 -11- 15 30 45
DOSAGE 4-2
SKIN PINK WARM DRY PINK WARM
PUPIL C M
LOCAL I II III
160 160 140 120 100 80 60 40 20 0
REMARKS

SCRUB
LOCAL
9:48 O 9:52 A
3-3
2-3
A LITTLE PULLING 2-4
4-2
10:13 C
AIR

CODE • PULSE ○ RESP. ✓ B.P.
ANESTHETIC ½% PROCAINE & C_2H_4 & O_2 TECHNIC GWATHMEY S.M. AMOUNT C_2H_4 $1.00
SURGEON J. C. MOORE ANESTHETIST JOHN S. LUNDY
OPERATION RIGHT SUPERIOR POLE LIGATION
REGAINED CONSCIOUSNESS AT 10:16 O'CLOCK
VOMITING NONE ☒ SLIGHT ☐ EXCESSIVE ☐ SLIGHT NAUSEA
CIRC. DEPRESSION 1ST — 2ND X 3RD — SHOCK
CONVALESCENCE NORMAL EXCEPT FOR

7



ANAESTHESIA RECORD
SEATTLE ASSOCIATION OF ANAESTHETISTS

COLUMBUS Hospital SEATTLE City WASHINGTON
NO. WARD 609 DATE DECEMBER 27, 1923. SURGICAL RISK A X B — C —
NAME MRS. M. AGE 24 HT 5-6 WT 115
OPERATION PROPOSED LAPAROTOMY - VAGINAL - APPENDECTOMY
PHYSICAL FINDINGS NORMAL EXCEPT ACUTE APPENDICITIS - VERY NERVOUS - HEMOGLOBIN 90% - R.B.C. 4,350,000 - W.B.C. 12,000 - POLYS 80%
PRELIMINARY HYPNOTIC MORPHINE - ATROPINE DOSE 1/4-1/150 TIME OF ADMIN. 4:15 PM IN 2 CC 25% MAGNESIUM SULPHATE SOLUTION

ONE SPONGE MISSING - NOT FOUND. ABDOMEN THOROUGHLY EXPLORED BY DRS. R. AND F.

HOUR A.M. P.M. 5 15 30 45 -6- 15 30 45 -7- 15 30 45 -8-
DOSAGE 3-0-1 3-0-2 3-0-1 1-3-2 5-0-2 4-0-2 0-3-2
SKIN PINK WARM DRY PINK WARM DRY PINK WARM DAMP PINK WARM WET
PUPIL C
N_2O C_2H_4
160 160 140 120 100 80 60 40 20 0
REMARKS

5:35 A 0-5-2
5:45 O VAGINAL
3-2 3-1
3-2 STRAINS 4-1
3-1
1-4-2
1-3-2 VOMITED
4-0-2 QUIET 3-2-2
3-1-2
2-3-1 2-3-2
STRAINED 6:43 C VAG.
4-0-2
6:52 O LAPAROTOMY
4-0-2
5-0-2 4-0-2
APPENDIX UP
RIGHT TUBE 5-0-2
4-0-2 OUT
LEFT TUBE OUT
CLOSING
PERITONEUM CLOSED/8:25

NITROUS OXIDE INDUCTION
CODE • PULSE ○ RESP. ✓ B.P.
ANESTHETIC C_2H_4 - N_2O & O_2 TECHNIC GWATHMEY AMOUNT C_2H_4 $8.00
SURGEON E. RICKARDS & FRENCH ANESTHETIST JOHN LUNDY
OPERATION VAGINAL - CERVICAL REPAIR - D & C - PERINEORROPHY - LAPAROTOMY APPENDECTOMY - RIGHT SALPINGECTOMY AND LEFT SALPINGECTOMY
REGAINED CONSCIOUSNESS AT 8:27 PM O'CLOCK
VOMITING NONE ☒ SLIGHT ☐ EXCESSIVE ☐
CIRC. DEPRESSION 1ST — 2ND — 3RD — SHOCK
CONVALESCENCE NORMAL EXCEPT FOR

8

Fig. 5—Severe shock, developing slowly in spite of two hemorrhages.

Fig. 7—A very bad goiter risk with unbalance occurring early. Ethylene-oxygen anesthesia reestablished fair cardiovascular balance. A similar effect may be seen in fig. 8, but under different circumstances.

Fig. 6—Almost complete decompensation with other physical handicaps. Shows a better balance within the cardiovascular system than in some cases considered good risks, where ethylene was not used.

Fig. 8—Ethylene and oxygen for 2 hours and 50 minutes. The last part of the record (after 7 p. m.) is a normal curve and may be used for comparisons. See the rise in pulse rate with N_2O and the sudden retardation with C_2H_4 (6:45 p. m.).

slowly and gradually, altho there were two different hemorrhages from the renal vein near the end of the operation. Fig. 6. Nothing but ethylene could have replaced local in this risk which was a combination of the several contraindications to general anesthesia and is proof of my contention, that the weaker the patient, the stronger the indications are for ethylene.

This type of case has lead me to conclude that *it is in the weak patients and the poor risk that the advantages of ethylene are most strikingly demonstrated.* Fig. 7 shows an advantageous administration of ethylene and oxygen in a very bad goiter risk. Notice that the rapid pulse with the local was quickly retarded with ethylene. The same retarding effect on the pulse rate occurs in fig 8, where nitrous oxide was used instead of local. Fig. 8. The last part of this record, after 7 p. m., is a normal curve and may be used for comparison. It illustrates the power of ethylene to slow a pulse rate which had become rapid during administration of N_2O.

SUMMARY

The value of ethylene in relation to other anesthetic agents has been determined by reviewing this limited number of carefully kept records. The following statements are based on facts as I see them now. Ethylene is nontoxic and without marked effect on ordinary blood pressures. However, in cases of chronic hypertension, the pressure may drop to an almost normal level without danger to life, provided the pulse rate decreases. There is no typical effect on the pulse rate, altho it is sometimes retarded to forty-eight beats per minute. The respiratory rate is not fast in adults, ranging between twelve and forty per minute. It is rapid and shallow in infants. During operation the ordinary causes of shock manifest themselves, but not as quickly nor to the same extent as when other anesthetic agents are used.

Ethlyene is a splendid addition to our list of anesthetic agents. It is particularly advantageous in bad heart cases, acidosis and diabetes, nephritis, in fact, any case in which you are at a loss as to what anesthetic to use. A preliminary hypnotic is often desirable, if not contraindicated. The dose, however, should be relatively small. Atropine reduces sweating in maximum rebreathing. The rebreathing method reduces the fire risk, as it allows only a minimum amount of gas to escape into the room. Ethylene divides the big gap between nitrous oxide and ether, midway, and permits an increased range of anesthesia. The Seattle Model machine gives the anesthetist unusual flexibility of control and almost any degree of anesthesia may be obtained with it. Such a machine permits the application of the various agents in such a maner as to make available their synergistic actions. I suggest that you try not to make any one agent do the impossible. The anesthetic should be varied until the proper mixture is obtained. The simple and safe rule is to keep the patient pink and asleep with a maximum of oxygen and a minimum of ether. Watch the curves of the blood pressure, pulse and respiratory rate and be governed accordingly.

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318 Cobb Bldg.

GAS GANGRENE (B. AEROGENES CAPSULATUS). ITS RECOGNITION AND TREATMENT. INCIDENCE IN CIVIL PRACTICE IN BRITISH COLUMBIA*

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VANCOUVER, B. C.

This paper is an attempt to bring to the attention of the members the present day knowledge of this disease, particularly the lessons learned in the Great War. The fact that it occurs more frequently in civil practice than is generally believed makes it a subject of practical importance to every surgeon, particularly those engaged in traumatic or industrial work, as it is in this class of injury that it is most frequently encountered.

During the past four months three patients, suffering from trauma and admitted to the Vancouver General Hospital, have developed the infection after admittance and during the past two years there have been six cases altogether in the Province, five of whom recovered. An effort has been made by means of a questionnaire, sent out to about fifty surgeons thruout the Province, to estimate the number of cases occuring in the Province during the ten-year period 1911-21. The returns are incomplete but an estimate of ten cases would probably cover it, with a mortality rate of 20-30 per cent.

That gas infection is a most serious and formidable complication is admitted without question and upon its early recognition and correct treatment much depends. Traumatic surgery particularly calls for a display on the part of the surgeon of more than the usual amount of observation, alertness and attention to the possibilities of this infection, when undertaking the treatment of such injuries and also the best of surgical judgment in dealing with the infection when it becomes manifest. The paucity of detailed information on this disease in the standard surgical textbooks, published prior to 1915, are indicative of the meager investigations made up to that date with the consequent ignorance displayed in its early recognition and treatment.

I shall not attempt to deal with the historical aspects of the disease except to mention that, since the description by Welch and Nuttall in 1892 of the bacillus aerogenes capsulatus and its recognition as an occasional cause of rapid and fatal septicemia, usually preceded by local death and decomposition of tissues at the side of its entrance, pathologists have met with it at the autopsy table from time to time and surgeons much less frequently in the operating room or ward.

Keen, in 1917, quotes Bowlby to the effect that it is practically unknown in Great Britain and adds "The same is true in the United States. Personally I never saw a single case in the Civil War and but one in civil life since." That gas bacillus infections are of more frequent occurrence in traumatic cases in civil practice than prewar literature had led us to suppose has been impressed upon me by my own experience and those of my colleagues at the Vancouver General Hospital during the present year.

The conditions prevailing in the early stages of the late war were peculiarly favorable to the occurrence of this infection and with a mortality approximating 50 per cent its importance to the medical authorities became evident, resulting in an intensive investigation, involving much research work into its nature, so that in the closing year of the war the mortality was reduced to 22 per cent.

Etiology. Soil containing the causative bacilli is directly implanted in the wound. Foreign bodies, bullet, shell, fragment or bits of patient's clothing easily implant the organisms. While the bacilli were found present in nearly all wounds, it was recognized that they did not necessarily gain a footing in the body or produce more than local signs. In certain places, namely the muscles, the cellular tissue, pleural fluid, hematomata and brain, it appeared they could live and flourish in varying degrees; while the peritoneum and the cavity of joints, tho the latter might contain gas, were practically immune. Comparatively early, Sacquepee, the French pathologist, and Kenneth Taylor, an American pathologist, working with the French, advanced the view that the disease was in the main an affection of the muscles. This view was later supported by British observers who pointed out that the disease hardly ever occurred or was but little to be feared, except in the case of wounded muscles and of tissues infiltrated with blood. It certainly appeared that the disease could in most cases be cut short by the excision of the muscles, tho this treatment failed, and failed to the end of the war, to arrest the so-called fulminating cases.

Clinical observation has clearly shown that a defective blood supply is the principal cause of the organisms gaining a footing in the body, when once they have been introduced into wounds. Such causes of defective blood supply may be (1) death of the tissue from the violence of the injury, (2) inefficient splinting, leading to injury of vessels or tissue, (3) constriction of limb or tourniquet bandages, etc., (4) damming back of discharge by packing introduced into the wound or by dressings in which the discharges have been allowed to dry and cake, (5) hemorrhage, cold and shock which, by producing a low blood pressure, are also potent factors.

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*Read beore the Twelfth Annual Meeting of North Pacific Surgical Association, Seattle, Wash., Dec. 7-8, 1923.

Sir H. E. Wright and coworkers have drawn attention to the fact that the occurrence of both a local and general acidosis was favorable to the growth of the organisms. This acidosis was considered to be connected with excessive exertion, fatigue, cold and a deficient blood pressure. It is very certain that the cutting of the blood supply to a muscle is a very important factor in its infection.

Observation has shown that the circulation within a muscle is largely a terminal one and that, while the capillaries anastomose, the larger trunks do not. The severance or thrombosis of an artery, while it will not kill the entire muscle, will lead to the death of its own particular distribution.

These observations seem to offer an easy explanation of some well known clinical facts: (1) that a dead or gangrenous muscle may be found in the midst of a healthy group, (2) the arrest of the disease at one point in a muscle, (3) the subsequent death and infection of a muscle that was healthy at the time of the primary cleansing operation. Here it would appear that the surgeon, in performing the cleaning operation, had inadvertently interfered with the blood supply.

Morbid Anatomy. Best studied under two heads. "A," group gangrene, (1) wounded muscle or muscle group with blood supply cut off, (2) infection of a wounded muscle or muscles with intact blood supply. "B," segmental gangrene (massive). In subgroup 1 of "A," if limb is dissected, it will be noticed that muscle or muscle group is dead but in other respects little altered except where wounded. Adjoining dead muscle lie perfectly normal contractile muscles.

The disease, so to speak, is a longitudinal one. The disease finds difficulty in passing from one muscle to another but easily extends up and down a muscle from end to end. The muscle involved changes color, varies in different cases, depending on type of bacteria present. First appearance is salmon red color (stage of red death). Gas generates and is visible, muscle becomes friable, color changes to yellow and finally may become black and diffluent. Connective tissues in immediate contact with diseased muscles may be little altered.

Gas may or may not be present in the areolar tissue and, when it is present, it tends to find its way along the main vessels of the limb. It also escapes into the subcutaneous tissues, following the perforating arteries and often extends far beyond the limits of the disease.

Subgroup 2, "A". Is comparatively rare, as muscles with intact blood supply show a great resistance to invasion. When it does take place it is seen as follows. The surface of the actual wound is dry or dirty-looking or black. Next to this is a red area which is limited towards the sound tissue by a yellow sinuous line. This line is raised and hard to the touch. Next to it lies the normal contractile red muscle.

Segmental or Massive Gangrene. All or nearly all the muscles of a segment of a limb distal to a complete arterial lesion, deprived of their blood supply, die or become infected. The appearances are similar to those seen on first subgroup of group gangrene, except that the muscles may not be wounded.

Bacteriology. Form (4) organisms mainly responsible.

1. *Bacillus Welchii.* Naked eye changes produced. (a) Yellow edema, sometimes blood stained. (b) Large gas production of short duration. (c) Salmon red color of the muscles. (d) Soft pulpy muscles. (e) Slight sourish smell. (f) Bronzing of the skin. (g) Appearance of fat globules in discharge.

2. *Vibrion Septique.* (a) Blood stained edema. (b) Large gas production. (c) Deep red color affected muscles. (d) An odor not putrid but rather rancid in character.

3. *Bacillus Edematiens.* (a) Colorless gelatinous edema. (b) Small amount of gas production. (c) Pale pink color muscles, deep red in heavily infected areas.

4. *Bacillus Sporogenes.* This bacillus may obscure the features of any of the gangrene types, but is most often associated with bacillus welchii, owing to the fact that the more rapid vibrion septique and the more toxic bacillus edematiens generally outrun the bacillus sporogenes in heavily mixed infections. The putrid type of gangrene which gets this character from the presence of bacillus sporogenes is generally, apparently, a 24-28 hour case or longer, not one of the 8-24 hours galloping ones. Bacillus sporogenes does not seem able to start off quite so quickly as bacillus welchii, vibron septique or bacillus edematiens.

There are two distinctive features in bacillus sporogenes infections: (a) Olive green color of the muscles, the color turning to black, (b) a putrid odor.

It is difficult to explain why the disease progresses in some cases and not in others. The advance in most cases is a local one. Metastasis may occur in certain places, such as the site of hypodermic or saline injections in the buttocks which are subject to pressure.

Bacilli are often found in the blood stream but this is often transitory and not necessarily of serious import. Vibrion septique causes a septicemia more often than any other.

Everything seems to point to the fact that a death of the tissue is a necessary antecedent to the spread of bacteria. Consequently there is no difficulty in understanding the spread of the infection in a muscle already deprived of its blood supply. The question is, what kills the tissues when the blood supply is intact? (1) Presence of calcium salts owing to their depressing effect on the tissue is an important factor in enabling the bacilli to gain a footing. (2) Taylor advanced the view that the gas produces the death of the tissues by its disruptive effects, but probably this plays only a secondary part by producing a tension in the limb which interferes with the blood supply. (3) D, Este Emery has shown how the toxin repels the leucocytes. Indeed, the absence of any reaction is one of the most striking phenomena of the advance of the gangrene. This observation, however, seems to explain better the failure of nature to arrest the disease than to offer an explanation of how the living tissues are killed, so as to afford a pabulum for the bacteria. The key to the problem lies in the observation that bacteria washed free of toxin are comparatively harmless. On the other hand, the toxins elaborated by bacilli welchii, vibrion septique and edematiens all cause considerable alteration in healthy living tissue. This is clearly illustrated by the local lesions of edema and necrosis which follow upon the intramuscular injections into animals of sublethal doses of the filtered sterile toxins of these organisms.

The phenomena of gas production is an important one from a clinical point of view, tho the part it plays in the spread of the disease is but a secondary one. It is generated about the time that the muscle begins to change color. It produces swelling and tympanites of the limb before it gives rise to a crepitation which is discernible by the fingers, but may be revealed by use of the stethescope.

If the fascia of the limb is intact or nearly so, the gas quickly increases the swelling and tension of the limb, and this tension is liable to render the skin white. If the gas can find no exit from the wound, it is forced into the areolar tissue between the muscles.

It follows the lines of least resistance and finds its way along the great vessels thru the fascia, and by means of the perforating arteries reaches the subcutaneous tissue, thru which it spreads far beyond the limits of the disease. When it reaches the skin the phenomenon of crepitation becomes especially marked.

Symptoms. When the wound is an open one, it may present simply bruised and torn muscle. Very often, however, the appearance is peculiar; the exposed muscle shows a dry deep purple color, at first sight suggesting dried fecal matter. Later on the wound becomes moister and there is a thin, foul discharge mixed with bubbles of gas and droplets of fat. Still later the discharge becomes copious and bright yellow, the yellow color being produced by hemolysis. The amount of odor varies greatly. In such a wound the infection may be purely local and the symptoms of absorption absent.

When the disease really gains an entrance into the body, it may be divided for purposes of clinical description into three groups: (a) Group gangrene, (b) segmental or massive gangrene, (c) fulminating gangrene.

The first two correspond to the types described under morbid anatomy. The fulminating is a purely clinical type which may originate in either of these.

The onset may be extremely acute and constitutional symptoms and gas production present themselves in a few hours. A patient, about whom there was no anxiety at night, has been found in the morning in a dangerous condition, the infection gaining ground while the patient was asleep or without causing him to summon the nurse.

The early symptoms are pain in the affected parts, a feeling of malaise or restlessness, a rise in temperature and pulse rate. Vomiting may be an early symptom and later become most distressing.

In the group type the skin at first is normal, later becomes blanched and tense. The area around the wound or even the whole limb becomes tympanitic. As the swelling increases, the skin becomes dirty white and the veins become prominent; mottling of the skin is noted; purple patches appear, due to the cutting off of the blood supply, owing to the death of the underlying muscles. Finally the skin takes on a greenish hue. It is important to remember that gangrenous muscles may be covered by a perfectly normal skin.

Fulminating type is exceedingly dangerous. Surgical measures often are unavailing.

Late Symptoms. If the disease is not sufficiently acute to cause death in a short time, the skin of the whole body first becomes dirty looking and then yellow, the yellow color being very noticeable in the whites of the eyes. If the case does not progress favorably, all the symptoms undergo an aggravation. The pulse becomes more rapid, then running; vomiting is frequent, the extremities become cold and blue; the body covered with sweat and the temperature falls.

Treatment. (a) Preventive.

1. Avoidance of all things that tend to restrict the blood supply, whether they be by tourniquet, tight bandages, inefficient splints, the damming back of discharges by dressings or the persistence of a state of shock. Combat shock with heat. 2. Mechanical cleansing of the wound at the earliest possible moment. Thoro soap and water cleaning of the surrounding parts is first done.

(b) When the disease has developed.

The actual treatment is governed by the state of the patient and the extent of the gangrene. Thus, a patient in good condition can be submitted to an operation for eradication of the diseased muscles, while in another patient the same amount of disease may demand amputation. When the patient is in good condition, mechanical cleansing of the wound is proceeded with in the usual way, adequate longitudinal incisions being used. Great gentleness is necessary and all injury to blood vessels avoided.

Attention is focused on the condition of the muscles. All muscles that do not contract or bleed or are altered in color are removed. Certain muscles may require to be followed to their atachments. By this means a limb, which would have been sacrificed if crepitation and tympanites had been taken as the criterion of the extent of the disease, may be saved at the expense of a muscle or group of muscles. Make a careful search for and remove all loose bone, foreign bodies, especially bits of clothing and bloodclots. Stop the bleeding. Leave the wound open and separate its walls with moist gauze loosely placed.

If the patient is in bad condition, as is most likely to occur in fractures of the long bones, amputation may be necessary. If it is thought that a higher amputation is indicated by a tympanitic condition of the skin, it is well to investigate the condition of the muscles by skin incisions, starting at the level of the injury and ascertaining if the muscles are dead at the level of the proposed amputation. In gas gangrene of the leg a guillotine thru the head of the tibia or knee joint is usually sufficient and is to be preferred to amputation thru the thigh.

Carrel-Dakin tubes should then be inserted into the deepest recesses of the wound and packed lightly around with gauze, the skin being protected with vaseline and the whole covered with an abundant soft absorbent dressing. Inspect the limb every three or four hours and, if necessary, remove the dressing each time. Treat acidosis by intravenous injection of sodium bicarbonate, hemorrhage by blood transfusion, toxicity with serum.

In all amputations it is probably better to leave the flaps open or to suture them lightly over gauze. Nonclosure of the flaps is an advantage, as it enables inspection of the stump and renders more easy the excision of muscles which are sometimes found dead within a few hours of amputation.

Serum Treatment. While the treatment of the condition is essentially surgical, yet there is definite evidence that much may be achieved with the aid of antitoxic sera. In the closing year of the war much attention was given to this new aid in therapy and in a few cases the results were so striking as to leave no reasonable doubt that they were due to the serum treatment, yet on the whole the results were disappointing, perhaps from lack of knowledge as to dosage and the best route of administration.

The treatment with serum should be instituted as early as possible and should be regarded rather as an aid to surgical treatment than as a treatment in itself. The surgeon may be assisted by the limitations of the spread of an infection which is in an early stage or in limiting the spread of an infection which it is surgically impossible to eradicate. For instance, after the removal of a group of gangrenous muscles the surgeon may fear the recurrence of the process in a neighboring group, and in this case antitoxic sera may be of use in saving further removal or destruction of tissue.

The serum given should be polyvalent with the weight thrown on B. welchii antitoxin. In the event of expert bacteriologic assistance not being available, the mixed serum should be continued, but in the event of a bacteriologic diagnosis being possible, the future treatment should be guided by the findings. In view of the almost invariable presence of B. welchii, it should never be safe to exclude B.

welchii antitoxin at any time. The value of monovalent sera is upheld by French authors and, judging from their reports, they are probably right.

Route of Administration is of considerable importance. The absorption of sera from the subcutaneous tissue is too slow. In cases of established gangrene, therefore, the serum should be administered intravenously and in large quantities. If the serum is well diluted in saline at the commencement (1:100) and the injection carried out slowly, the risk of anaphylactic shock is greatly diminished. The serum should also be used locally by injections into the muscles around the focus and by instillation into the gangrenous focus, as in the majority of cases the site of the gangrene is outside the reach of antitoxin circulating in the blood stream. The points of injection of the serum may be so chosen as to set up a "barrage" between the spreading gangrenous process and the normal tissue. The injections should be repeated at frequent intervals, every few hours intravenously and at every dressing or operation locally.

It is important to remember, however, that no serum treatment will replace surgical treatment. The object in view in treating a patient with antitoxic sera should be either to limit the spread of the process before or after operation or to render a deeply intoxicated patient a subject on whom surgical intervention may be attempted with some hope of success.

Prophylactic Use of Sera. A considerable experiment was made in 1918 on the serum prophylaxis of gas gangrene in the British army under the direction of Col. S. L. Cummins, adviser in pathology to R. A. M. C.

(1) A.T.S. and W. = antitentanic serum and antitoxin B. welchii. (2) A.T.S. and O.=ordinary antitetanic serum.

In the front Area C. C. S. approximately 9500 men received No. 1, with 119 cases developing and a mortality of cases of 21.84 per cent. Approximately 13,000 wounded were given No. 2 with 156 cases developing and a mortality of 24.35 per cent of cases.

At the base hospitals 15,740 men received No. 1, with 43 cases of gangrene developing with a mortality of 5 or 11.65 per cent of cases; 23,792 men were given No. 2 with 92 cases of gangrene developing and a mortality of 21, or 22.82 per cent. The mortality in cases arising in base hospitals was reduced by about 50 per cent.

It is consequently believed that in prophylaxis the most promising results in the use of antitoxic sera for gas gangrene will be obtained. For this purpose a combined antitoxin should be available which should contain antitoxin for tetantus, B. welchii, B. edematiens and vibrion septique. The titre of the serum should be as high in antitoxic units as it is possible to make it. The serum should be used as soon as possible after the wound has been inflicted; it should be injected intramuscularly and, in severe wounds, locally as well.

CESAREAN SECTION *

Richard J. O'Shea, M.D.

SEATTLE, WASH.

The operation of cesarean section must always be a matter of supreme interest to general practitioners, as upon them rests the responsibility for the care and safety of the majority of mothers and their infants at the time of parturition. My paper is not a thesis on cesarean section but a report of 130 consecutive cases over a period of fifteen years. Discussion by this learned body on this subject is my object.

The absolute indications, in which there is no question of choice, are comparatively simple. All other conditions fall within the category of relative indications. During the last few years the list of relative indications has been enormously amplified, and careful judgment is called for in making the decision in individual cases between this operation and alternative methods of treatment.

Absolute indications. (1) Contracted pelvis with conjugate vera of 7 cm. or less, or with other measurements correspondingly small.

(2). Hard solid tumors fixed in the pelvis, causing narrowing to the extent that delivery thru the pelvis is impossible. In all of this type of cases delivery is quite out of the question. Thirty of such sections I have performed for extreme forms of pelvic deformity, with a conjugate vera of 7 cm. or less.

Relative indications, however, open up a wide field for discussion. In this paper I will relate briefly what make up my series of operations done for relative indications.

(1). One case of threatened rupture of the uterus, following multiple myomectomies.

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* Read before the Twelfth Annual Meeting of North Pacific Surgical Association, Seattle, Wash., Dec. 7-8, 1923.

(2). Six sections with twin pregnancies, accompanied by toxemia, in which we had no response to treatment.

(3). Tumors. Ten sections, six with accompanying fibroids impacting or obstructing, two with ovarian cysts impacting. Two with dermoid cysts impacting, one of which had been previously ruptured on two occasions by the use of forceps with resulting death to babies and peritonitis.

(4). Six sections for placenta previa. Three for centralis, two for lateralis and one marginalis.

(5). Postoperative hernias, with accompanying pendulous abdomen, of which we had two.

(6). One in bicornuate uterus.

(7). Two with atresia of the vagina.

(8). Three resultant from ventral fixation with accompanying dystocia, due to pointing of the cervix into the hollow of the sacrum.

(9). Where previous section has been performed with accompanying sepsis. The histories in these cases are rather indefinite, but from the history they were accompanied by postoperative fever. The danger of rupture of the uterine scar in these cases is at its maximum. There were four in this group, two for eclampsia, one for placenta previa and one for contraction of the pelvic outlet.

(10). Two sections where there had been previous fracture of the pelvis at its brim or outlet with permanent exostoses.

(11). Three breaches in elderly primiparae, one of 36, one of 41 and one of 44 years.

(12). Two in advance cases of pulmonary tuberculosis.

(13). Two in advanced cases of mitral stenosis.

(14). Two in pelves of the coxalgic type with conjugate vera of 7 cm.

(15). Two in eclampsia by request.

(16). In multiparous women with pregnancy, following multiple repairs such as colporrhaphy, rectovaginal and vesicovaginal fistula, with accompanying tremendous denudation and scarring of the vagina. Five cases comprised this group.

(17). Resulting from excessive cicatricial contraction of the cervix following amputation. Three in this group.

(18). Six cases where second section has been performed for absolute contraction.

Then we come to a class of cases that cause a maximum amount of mental discussion and worry, the moderately contracted pelvis, or better known as border-line cases in primiparae that come to the end of their pregnancy with a high presenting part. It is generally agreed that three and one-quarter to three and one-half inches is the lowest limit permitting delivery of a living child. Three and one-half inches, I think, should be accepted, but it is not enough to measure the conjugate only. The size of the head should be considered and whether it can be made to engage comfortably in the brim. Every individual case must be considered on its merits. We hear on all sides, "once a section always a section." This is true of the absolute type but not so of the relative type.

I am well aware that some of the indications for my sections that I have mentioned can and will be questioned. I do not recommend section indiscriminately, simply because it is spectacular and at the same time the easiest abdominal section to perform. It has been, is and will be abused. The abuse of axis traction forceps in border line cases is one of the sad annoyances in obstetrics. I believe that even in the hands of the mediocre surgeon cesarean section is infinitely safer as a safeguard against the great danger of severe or irreparable injury to both mother and child. I am absolutely opposed to the application of forceps on a ballotting head and the dragging of the uterine contents into the world. It can be done, but what an aftermath.

From what I have seen and the fatalities I have witnessed, I do strongly endorse the stand that cesarean section be chosen in a case of obstructive labor, in preference to a means of delivery that threatens permanent disability to the mother and a high rate of death or crippling for the child. You may think that some of the procedures I advocate too radical, but at all times I hope I keep in mind that I have two patients to deal with, two lives to safeguard and, unless both are discharged from my care alive and in good condition, I have not done the best obstetrics that is expected of me.

My mortality both as to mother and child in this series of cases has been nil. I consider this my justification for the line of treatment I have followed. These cases which I have reported have been consecutive and represent 7 per cent of all my obstetric work, covering a period of fifteen years. The results are due chiefly, I believe, to the facts, first, that the diagnosis has been made definitely beforehand in the vast majority of cases and the line of treatment deliberately planned; and, second, there has been no previous examinations by vagina or any other form of manipulation or operative treatment instituted. Thus the danger of infection has been obviated.

TYPHOID CARRIER FOUND

The following appeared in Health News, published by the New York State Department of Health, issue of March 3:

Interesting data have been obtained in connection with three fatal cases of typhoid fever which recently occurred in one family. Two weeks prior to the date of onset of illness, two of the victims had been vsiting a dairy farm in a distant municipality on which a typhoid carrier subsequently was discovered. With the onset of the first case the attending physician urged the three non-immune members of the family to have typhoid vaccine administered. Of the two who accepted his offer, one did not come down with the disease. The other, one of those who had been exposed at the farm, received one inoculation which, however, failed to protect her because as later events proved, she was already coming down with typhoid fever. The third non-immune member of the family, viz., the one who had refused to be inoculated with the anti-typhoid vaccine, continued caring for the two already ill. In due course of time she developed the disease and died.

Investigation by the Department disclosed a typhoid carrier on the dairy farm which members of the afflicted family had visited. This carrier gave a history of having had typhoid fever forty-six years ago. About fifteen years ago one of the children in the carrier's home had the disease; about two years ago two people came down with it a few weeks after attending a social function at the home of the carrier; while last summer a man working on the farm was stricken with the disease. A case of typhoid fever also occurred in each of two neighboring families who used water from a creek into which the effluent flowed from the septic tank on the farm of the carrier. In one house the disease appeared within a month after the family had moved into the house; in the other house a relative of the carrier came down with typhoid fever. An epidemic of typhoid fever in a neighboring city occurred six years ago. It appears that at the time, milk from the carrier's farm was being sold in that city.

ONE GOOD WAY OF DISCOURAGING TANTRUMS

If the three- or four-year-old child is contrary, it is only to be expected. At that age contrariness is a natural stage of development.

Fathers and mothers may gain some ray of comfort from the above observation of a *Hygeia* writer, Mrs. Helen T. Wooley, whose article in the March issue on "Overcoming Contrariness and Fears in Children" contains much that is helpful to parents and teachers.

"Children at three or four are just realizing that they have personalities," says the writer, "and are trying out their powers and their limitations.

"They like to see if and how far they can assert their own wills and get the better of adults about them. Exaggerated types of contrariness, of course, are detrimental to mental health."

When a spoiled and contrary child at Mrs. Wooley's nursery school in Detroit has a tantrum, the teacher says:

"If you wish to behave this way, it must be in a room by yourself. You are disturbing everyone here with your noise."

The child is then led or removed bodily to a quiet room and left alone until the fit is over.

No one coaxes, no one threatens, no one compromises.

As soon as he is quiet again he is allowed to come back as if nothing had happened. A few applications of this treatment does away with tantrums in the schoolroom.

The source of most trouble in managing children is in the inability of the parents to see the child from his own point of view. Parents often seem to enjoy fussing with their children. The child's whole regime is one of adult correction and interference.

Contrariness in children is cultivated in two ways, Mrs. Wooley believes.

The first is that of constant interference and argument over everything that has to be done and of continual attempts to direct the child in small detail. The other type of error is to demand behavior which is beyond the child's present possibilities.

If mother or father makes demands about unnecessary small details of life, the child in self-defense rebels in everything. He is apt to become interested in refusal and to make a game of the row that results. The upshot is that he is in the attitude of looking for a chance to refuse.

It is perfectly possible for parents to insist on reasonable things in such a way that it will not occur to the child to refuse. But if they insist on things of which the child is, at the time, incapable, his only mode of defense is to refuse and become ill tempered about it.

Parents should learn the simple lesson of providing suitable occupations for young children and then letting them alone as long as they are happy and busily occupied, never interfering unless it is necessary to do so. Through such management, most excessive contrariness could be avoided.

A STUDY OF THE ACUTE INFECTIONS OF THE THROAT AND RESPIRATORY SYSTEM

The problems involved in the occurrence and spread of the acute respiratory infections are discussed by D. F. Smiley, Ithaca, N. Y. (Journal A. M. A., Feb. 16, 1924). A monthly record of the acute infections of the throat and respiratory system has been kept for the last four years at the Cornell University medical advisor's office. This record has shown, year after year, a gradual rise to a maximum number of cases in January, February or March, and a gradual fall as summer approaches. An analysis of these records apparently shows that tobacco, dust, gas, mouth breathing, sleep, drafts, constipation, perspiration, bathing and footwear are apparently not major factors in determining resistance to respiratory infections in this particular group. Exercise appears as a liability rather than an asset in this group (probably because of improper care of the body in the stage of fatigue following the usual violent sport). The use of woolen underwear is apparently no panacea for the prevention of "colds"; in fact, it seems almost safe to infer that the use of light underwear is preferable under conditions obtaining at Ithaca. Heredity may be a factor in determining resistance through carrying on to the next generation a "catarrhal diathesis" or the opposite.

NEW ADVERTISEMENTS

Attention is called to the advertisement of the Gwathmey Apparatus for Anesthesia (page 31), made by The Foregger Company.

NORTHWEST MEDICINE
The Journal of the State Medical Associations of Oregon, Washington, Idaho and Montana
Devoted to the interests of the Medical Profession of the Pacific Northwest
Editorial Office, 323 Cobb Building, Seattle, Wash.
MARCH, 1924

EDITORIAL

THE NEW VIEW OF INTESTINAL PERISTALSIS

The fact that most symptoms of diseases of the gastrointestinal canal are due to disturbances of the motility of that canal has been sensed by many clinicians, but actually known or proven by few. Witness the diagnoses of so many men of known ability who mention "hyperchlorhydria," "gastritis," "achylia gastrica," "gastralgia," and the complacent, unscientific diagnoses of "nervous dyspepsia," "indigestion," "dyspepsia," "biliousness" of others. The work of Rehfuss and his followers has shown the error of our views on gastric secretion. Hyperacid states, as we formerly understood them, are more often normal than pathologic. The frequency of the association of some other lesion, particularly gallbladder disease, with achylia gastrica, and the rarity with which "gastritis" is scientifically established as a diagnosis, especially since Volstead became famous, should be sufficent warrant for the assertions we have made.

Comes now the splendid little book by Alvarez* on "The Mechanics of the Digestive Tract," that scientifically places most gastrointestinal symptoms on a mechanical basis. His explanations, while not all proven by direct experimentation, are certainly acceptable by the compellingly convincing analogies he presents. His work is an example of the possibility of combining clinical practice with scientific investigation, of the practical application of theoretic study. We believe his work will take rank with that of Bayliss and Starling, Carlson, Lockhart and Cannon, among the workers on the physiology of digestion. Indeed, his work makes untenable one of the important laws of Bayliss and Starling, namely, that of the "myenteric reflex," first questioned by Cannon. Alvarez has shown that their work is based upon experiments, most of which were made with foreign bodies introduced into the bowel thru an incision, and that often their experiments were fortified by the use of cathartics, both procedures open to scientific criticism. Finally Alvarez, in twenty thousand polygraphic tracings of unopened intestinal canals, studied in normal animals submerged in Lock's solution, has rarely seen the phenomenon described by them. Sir Arthur Keith has seen possibilities in the study of the intestinal canal by Alvarez's method that may lead to the discovery of pacemakers, conduction systems, nodes and disturbances in them and their conduction leading to disturbed peristalsis and symptomatology, comparable to those of the newer cardiac physiology and pathology of cardiac rhythm.

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* See Book Reviews.

THE JUNE MEETING AT VANCOUVER

The forthcoming meeting of the Pacific Northwest Medical Association, to be held in Vancouver, B. C., next summer, will be an outstanding event in the medical life of the Pacific Northwest. The date of the meeting is June 26-28. Vancouver is rapidly becoming known over the whole continent as a "convention city," and medical men will find it well worth their while to make a serious effort to attend this meeting. It will be held in the summer, in a city of great natural beauty, blessed by a delightful climate, easily accessible by good motor roads, and affording opportunities for trips by boat, motor or rail, such as one will find in few cities in the Northwest.

The management of the meeting is in the hands of the Vancouver Medical Association and a very interesting and instructive program is now assured. Medical men will receive advance notice of the meeting, and the program will not be enlarged upon at this time. It is urged, however, that this notice be carefully considered and plans be made to reserve the date of this meeting. Men of international repute have accepted the invitation to be present and give addresses, including such men as Cotton of Boston, Thomson Walker of London, Chipman of Montreal, Rowntree of the Mayo Clinic and others, whom one cannot afford to miss.

The sessions of the association and its executive committee will be held in the Vancouver Hotel, which will be headquarters of the association. Ideal arrangements will exist. There will be a large commercial exhibit in the lobby of the hotel. A small committee room has been provided for the public sessions of the executive committee. Dining rooms adjoining the convention hall will be utilized for luncheons, some of which will be served in cafeteria style, so there will be the least interruption possible to the sessions. A committee of women has been appointed to look after the entertainment of the women guests.

Owing to the fact that a squadron of the British Navy will assemble in Vancouver Bay on June 28, and that it will be met by the Pacific Fleet of the American Navy, it is expected that a very large transient population will occupy the hotels during that time. It will, therefore, be important for all who expect to attend this meeting to make their reservations early.

The North Pacific Pediatric Association will meet the day preceding and most of its members are expected to stay over for the meeting of the larger association.

REDUCTION OF TAXES

All physicians realize that excessive taxes are imposed upon them as a body, emanating from different sources. When an opportunity presents for a reduction of such taxes, each should do his part to attain this result. Such a situation is now before the medical profession, to secure a reduction of the excessive Narcotic Act tax and on the score of expenses incurred in pursuit of its profession. The matter was summarized so effectively in last month's issue of the *Messenger,* the official publication of the Public Health League of Washington, that it is herewith reproduced as published.

A letter from the American Medical Association to the Public Health League is quoted below:

"Physicians have justly complained of two features of the federal revenue laws, namely:

"(1) The imposition under the Harrison Narcotic Act of a tax greater than is necessary to give the federal government jurisdiction for the purposes of the act; and

"(2) The denial to the physician of the right to deduct in computing his income tax certain expenses incurred in the pursuit of his profession; or, otherwise expressed, the demand that the physician pay an income tax on money paid out by him as one of the expenses of his profession.

"The revision of the revenue laws, now under consideration by Congress, opens the way to relief. It affords, too, thru a suggestion made by the Secretary of the Treasury, the opportunity for a reduction in the tax rate on the physician's earned income as distinguished from his income from other sources.

"But to obtain the benefits now within reach, the medical profession must seize the opportunity and make its wishes known to Congress. To facilitate such action, a memorandum containing arguments in support of the position taken by the medical profession and a statement of procedure to be followed will appear in the Journal for January 26. To enable you to take action immediately, however, an advance copy of that memorandum is enclosed. Please procure as prompt and as effective action as is possible, and by your state and county societies and by individual physicians in your state."

"Every physician should read carefully the article, which appeared in the January 26th number of the Journal. The proposed reduction on earned incomes of 25 per cent is one in which we should, individually and collectively, interest ourselves.

"Now is the time to protest the $3 annual Harrison Narcotic Act tax. This is collected astensibly for the purpose of paying the expenses of the enforcement of the act; but $610,311.13 excess was paid into the general fund in 1922 from this source. The original $1 tax should be restored.

"Changes in the phraseology of the law which will permit physicians to deduct, as professional expense, the cost of postgraduate study and attending clinics and conventions, should be insisted upon.

METHOD OF PROCEDURE

"State and county societies should adopt resolutions, and file copies of them with the Committee on Ways and Means of the House of Representatives, and the Committee on Finance of the Senate. This can be best done thru an interested senator or representative in Washington. Copies of such resolutions should be sent also to all senators and representatives from the state from which the request and protest comes. Individual physicians should write to the senators and representatives who represent them in Congress, acquainting them with the views of the profession regarding the situation."

FOOD POISONING AND ITS RELATION TO CANNING METHODS

So many papers have appeared on the subject of botulism in the journals during the recent years, that every physician is more or less informed on the subject. The danger from this source has been given great prominence in the Pacific Northwest during the past few months, in consequence of the tragedy which occurred in Albany, Ore., when two families were wiped out of existence in consequence of eating home canned vegetables, in which existed the organisms producing the disease known as botulism. Dr. F. H. Stricker, of Portland, state health officer, has prepared the following statement concerning food poisoning. It represents the latest information on the subject and is, therefore, submitted to the consideration of the profession.

"The tragic outbreak of botulism that recently occurred at Albany has so focused the attention of the entire State of Oregon on the problem as to regard it in the light of gravest concern. Recent epidemiologic observations have shown that the term "food poisoning" should probably be limited to the intoxication of B. botulinis and the poisonings by food contaminated with the organisms of the paratyphoid-enteritidis group and perhaps of other bacteria. Outbreaks of food poisoning are explosive in character, usually short of duration and frequently disregarded, unless there are spectacular features or the outbreak is botulism, similar to the occurrence at Albany.

"It can be noted by the discussion in the foregoing paragraph that there are two types of food poisoning. The symptoms are distinct and they should be easily recognized and differentiated. The first type is popularly known as "ptomaine" and is characterized by an incubation period of usually four to six hours, practically no mortality, naseau, vomiting, abdominal pain, prostration, diarrhea and rise of temperature. This type is due to food previously contaminated with the bacteria of the paratyphoid group thru the agencies of a carrier, contact with polluted water and milk supplies, rodents and other animals. In this type always suspect freshly cooked or "warmed over" food, especially if there has been some previous period of heating. These bacteria are comparatively easily destroyed by heat, therefore canned foods are not involved, and they rarely ever cause spoilage of food.

BOTULISM

"In the majority of cases of botulism the incubation period is from twenty-four to forty-eight hours, tho the onset may occur earlier or may be delayed. The characteristic evidence of the disease recorded in botulism are quoted in their usual order as follows: Delayed onset, marked muscular weakness, gastrointestinal symptoms, disturbances of vision, with double vision, loss of ability to swallow and talk, constipation, rapid pulse, and subnormal temperature, rarely any pain, death from respiratory failure, and a mortality rate of sometimes 100 per cent.

"In this type of food poisoning always suspect preserved foods and meat products, such as sausages. The food causing outbreaks of botulism has often been observed to be spoiled and housewives are warned not to taste such foods.

RELATION OF CANNING TO BOTULISM

"The majority of outbreaks of botulism have been due to underheated or underprocessed foods. It is fundamental that methods of canning must insure sufficient heat penetration and make allowance for altitude, and the acid or alkaline concentration of the products. Sanitation by the thoro cleansing, proper storage, and the use of fresh products is primarily essential. There have been no outbreaks of botulism traced to commercially canned food since February, 1922, while there have been in the same period twenty-eight outbreaks attributed to home canned foods. It would appear that the precautions taken by the commercial canning industry have been efficacious. The minimum temperature use should be 240° F., but a complete knowledge of the above requirements would replace scientific methods for empircisms.

"To summarize: When in doubt of your food, destroy it or boil it thoroly before serving."

HOMEOPATHY AND THE ABRAMS CULT

The followers of the unproven and fantastic theories of disease, enunciated by Abrams, have made strenuous effort to attach their cult to some scientific branch of medicine in order to give it standing before the public, and that it may be supported with some sort of authoritative influence. Recently it was announced that the claims of Abrams had been endorsed by the American Institute of Homeopathy. The officials of this organization were overwhelmed with letters of inquiry and protest. Accordingly this Institute, at its annual meeting at Atlantic City, last July, passed resolutions repudiating such alleged endorsement. The *Journal of the American Institute of Homeopathy* publishes a statement on this matter, of which the following is an abstract:

"At this meeting it was unanimously voted that, whereas the American Institute of Homeopathy since its inception has at all times stood for the study and development of the art of healing, not only by the application of drugs for the cure of disease in accordance with the formula similia similibus curentur, but it also believes in the scientific investigation of all methods of healing disease, and, whereas the homeopathic school has not only been willing but repeatedly has sought subjection of its clinical results to scientific observation and control, therefore be it resolved that the seventy-ninth annual session of the American Institute of Homeopathy does not approve or endorse any so-called method of cure which is unwilling to submit its claim to impartial and legitimate observation.

"While it does not specify the electronic theory, it was brought out in the discussion that this resolution applied especially to it. The adoption of this resolution shows very clearly that the Institute does not in any way endorse this theory. In addition, no federated, affiliated or allied society of this organization has in any way endorsed it. This further statement of fact is added in order to correct any false impression which may have been received by the medical profession as a result of a circular letter, in which a purported endorsement by a homeopathic organization was given great prominence."

A NOTEWORTHY APPOINTMENT

When medical institutions of the East seek men to assume charge of their various departments, they commonly secure them from eastern sections of the country. When, therefore, a man for this purpose is chosen from the Pacific Coast such selection is worthy of comment. Recently, Dr. John S. Lundy, of Seattle, has been appointed director of the newly established department of anesthesia at the Mayo Clinic. This is a notable distinction for Dr. Lundy and a worthy testimonial to the eminence which he has attained in the specialty of anesthesia. His prominence and success in this line of work are well known among the profession of his city. We extend to him our congratulations for his appointment and the recognition of his qualifications in this particular line of work. It is safe to predict that he will gain nation-wide distinction along this line of effort during the coming years. His many Seattle friends will participate in the satisfaction which may be expected to follow the assumption of this responsible position.

MEDICAL NOTES

OREGON

Medical Society Reorganized. A meeting of Coos County Medical Society was held at Marshfield, Feb. 9, for reorganization and election of officers. President E. B. McDaniel, of the State Medical Association and Dr. Fred Stricker were present at the meeting. The following officers were elected for the ensuing year: President, Dr. E. Mingus; Vice-President, Dr. Earl Low; Secretary-Treasurer, Dr. H. M. Peery; Counselors, Drs. G. E. Dix, Wm. Horsfall and A. B. Peacock.

Appointed to Mayo Clinic. Dr. J. R. Coffey, of Portland, has been appointed to the fellowship staff to the Mayo Clinic, Rochester, Minn. He is a native of Portland and a graduate of the University of Oregon medical school. He has recently been house surgeon at St. Agnes Hospital, Baltimore, under Dr. J. C. Bloodgood.

Candidate for Mayor. It has been announced that Dr. Geo. Parrish, health officer of Portland, has declared his candidacy for the mayoralty at the coming November election. If all the physicians of the city will induce all their patients to vote for Dr. Parrish, he will certainly be the next mayor of the city.

Appointed Health Officer. Dr. L. E. Briscoe, of Portland, has been appointed county health officer and county physician. He is to be full time health officer and will establish the county health department. Hitherto this work has been divided among several physicians.

Missionary in the Orient. A letter has recently been received from Dr. Linus H. Bittner, formerly of Portland, graduate of Reed College and University of Oregon medical school, who has been doing hospital work in Java. He states he has been transferred to a missionary hospital in that island. As is true with all hospitals in the Orient he has been overwhelmed with a mass of medical and surgical cases.

Doctor Will Erect Building. Dr. H. M. Smith, of Astoria, will soon erect a two-story modern, fireproof building on Commercial Street. Foundations for the same were laid sometime ago. The lower floor will be divided into stores, while the upper will be used for offices.

Dr. H. F. Leonard, of Portland, has recently returned home after an absence for study in Eastern cities.

WASHINGTON

Hospital Accommodations Increased. State officials have provided for additions to state institutions which will accommodate 450 additional patients. At the Northern Hospital, at Sedro-Woolley, a new nurses home will be built which will release accommodations for about 115 patients. The women's home and clinic, at Medical Lake, is being remodeled, making provision for about 200 patients. Completion of the Federal hospital, at American Lake, will release accommodations to the state for about 130 patients at Steilacoom.

Preserve the Cushman Hospital. Strenuous efforts are being made to induce the Government to retain the use of the Cushman Hospital at Tacoma. The buildings of this hospital are frame structures on concrete foundations. Government officials object to the use of frame buildings for hospital purposes. The Tacoma city council states that $200,000 could build six concrete structures on these foundations, which would control the fire hazard. It is expected that the peak of hospitalization among war veterans will not be reached for at least six years. Therefore, the capacity of this hospital will be needed for their use.

Bid for Hospital. It is reported that the state probation officer has made an offer to the city of Tacoma for its building, the contagious hospital in the south end, formerly used for the treatment of venereal disease in women. It is said the state proposes to use the building for the isolation of girls from the institution at Everett.

Malpractice Suit Thrown Out. A legal contest, charging malpractice against Dr. W. L. McClure and Dr. A. J. Helton, of Yakima, was conducted in a vigorous manner for several days, when the suit was abruptly concluded and the charges suddenly dismissed. Insufficient evidence to sustain the charges was the cause of its dismissal. Witnesses for the plaintiff admitted that the accused doctors had done everything possible for the patient.

Measles Epidemic Passing. The wide-spread measles epidemic which has prevailed within the states of the Pacific Northwest for the past two months is gradually subsiding. At one time it was estimated that there were about 7000 cases in King County outside of Seattle, and more than that number in the city. It was simply the periodical appearance of this disease among a new quantity of susceptible children.

Low Death Rate Among Washington Students. Statistics show the death rate for individuals of college age in the United States is 5 for each 1,000. In the colleges, however, the rate in the large Eastern institutions is 4 to every 1,000. Last year, at the University of Washington, the rate was only 3 per 1,000. One of the chief reasons for this lower rate is reported to be the scarcity of pneumonia in the Seattle climate.

Appointed Pension Examiner. Dr. Chas. E. McClure, of Seattle, has been appointed upon the pensioning examining board of that city, in place of Dr. F. M. Carroll, resigned. The other members are Drs. S. J. Holmes and Arthur Jordan.

Elected President. Dr. Walter Kelton, of Seattle, was last month elected president of the International Optimists Club. A man at the head of such an organization should radiate good cheer at all times and in all places.

Appointed Full Time Health Officer. Dr. Louis H. Maxson, who has practiced for the past two years at Coupeville, has located at Wenatchee. He has been appointed full-time health officer for that city and Chelan County. This appointment is in line with the efforts of the state board of health to have full-time health officers appointed within the large centers of population.

Appointed to the United States Army. Dr. J. G. McCrary, formerly of Spokane, who has practiced in Seattle for the past year, has received a commission as surgeon in the United States Army.

Touring the Southern Seas. Drs. I. A. Parry and J. F. Dean, of Seattle, sailed from Vancouver last month with Dr. W. J. Mayo and Dr. Franklin H. Martin. They will visit Honolulu, New Zealand and Australia.

Dr. I. P. Weber, formerly of Worland, Wyo., has located for practice at Acme.

IDAHO

Is This the Ideal Medical Society? The Idaho Falls Medical Society, composed of all the practicing physicians of the city, does the county and city work, the proceeds going to the society. A meeting is held the first Friday evening in each month. Dinner is followed by the program.

The society pays the following expenses for the members, beside paying the secretary: Dues for county and state, dues for the League for the Conservation of Public Health, $5,000 malpractice policy for each member, narcotic license, state license renewal, cost of dinners. The society has twelve members present at every meeting, except in emergencies. If some one has a better organized society and one that does more for its members, please let us know.

Hospital Equipped. Physicians of Parma have recently formed a hospital association and remodeled a residence to form an up-to-date hospital. It is equipped with all needed hospital appliances and fills a real need in the community.

Dr. L. A. Smith, who has practiced for some time at Lapwai, has located at Troy, where he will continue his practice for the future.

MONTANA

Medical Society Twenty Years Old. Missoula County Medical Society was organized about 20 years ago with ten members. In 1915 it became known as the West Montana society, in order to include physicians in small towns in that section. At present there are 42 members, representing nine towns outside of Missoula. Newly elected officers are Dr. J. M. Graybeal, President; Dr. A. R. Ross, Vice-president; Dr. J. P. Ritchey, Secretary-treasurer.

New Hospital Opened. The addition to St. Patrick's Hospital, at Missoula, was opened last month. This addition has cost $200,000 and doubles the hospital accommodations, thus providing one hundred fifty beds. It is a fireproof building, equipped with all modern conveniences for hospital purposes.

Will Purchase New Hospital. The secretary of the state board of health conferred with the county commissioners last month, at Great Falls, relative to purchasing a new building in that city for a detention hospital. It is stated that the building now in use is deficient in equipment and not properly arranged for hospital purposes.

Appeals From Court Order. The state board of health, at a recent meeting, decided to appeal to the

Supreme Court from the recent decision of Judge Carroll nullifying the required vaccination of school children.

Typhoid Fever Decreases. The recent report of the state board of health that during the past year only 3 persons out of every 1000 died of typhoid in the state, compared with 39.8 deaths from the same number during 1910. This rate is lower than that in the country at large, the national death rate being given as 7.5. These figures indicate effective results on the part of the state board of health.

Two Doctors Appointed. At a recent meeting of the county commissioners held in Plentywood, it was voted to engage two physicians for Sheridan County, one to act as health officer, the other to attend to the poor of the county.

Appoint Health Officer. At a recent meeting of the county health board at Poplar, Dr. Darland, of that city, was appointed county health officer.

Reelected Health Officer. Last month Dr. D. J. Donohue, of Anaconda, was reelected county health officer for the coming year. He also serves as county physician, and is president of the state board of health.

Appointed City Physician. Dr. J. I. Wernham, of Billings, was last month appointed city physician for the ensuing year.

Physician Goes to Penitentiary. Dr. H. Goodfriend, of Boise, was convicted about a year ago, together with the former county sheriff and deputy sheriff, for violating the prohibition law. Rehearing of the case has recently been denied by the United States district court. The doctor stated he would take the trip unattended and serve the sentence of fifteen months, with the expectation of returning home and resuming practice among his friends.

Doctor Heads Anti-Volsteaders. Dr. T. J. B. Shanley, of Butte, was last month elected president of the Butte division of the national association against the prohibition amendment. This organization has a membership in that city of about 250.

Dr. R. D. Wright, who has been physician at the smelter at East Helena, last month left for San Francisco where he will engage in practice.

OBITUARIES

Dr. Charles B. Stewart, of Walla Walla, Wash., died Feb. 2, from disease of the heart. He was born in Jackson County, Ore., in 1859. At four years of age his family moved to Walla Walla. His preliminary education was obtained at the public schools and afterwards he attended Whitman College. He graduated in medicine from Jefferson Medical College and, after two years postgraduate study, he located in Walla Walla in 1888. He served for a number of years as coroner. He was widely recognized as one of the leading men of the medical profession in that part of the state.

Dr. Sherman Loughbridge, of Grants Pass., Ore., died Jan. 23, as a result of injuries received when his automobile skidded off from an embankment, pinning him beneath it. He was hurrying to answer a call at the time, the husband of the patient being in the car and seriously injured at the same time. He was born in Appanoose, Ia., in 1865. He spent his youth on a western Kansas farm. He received his medical education at the University of Missouri medical school in Kansas City. He practiced for six years at Overbrook, Kan. In 1903 he settled at Grants Pass, where he practiced until his death.

Dr. William D. Wood, of Hillsboro, Ore., died at Los Angeles, Feb. 12, from cerebral hemorrhage. He was born at Glencoe, now known as North Plains, in 1852, thus being a native son of Oregon. He graduated in medicine from the University of Michigan, 1890, and began practice in Hillsboro at that time. He served two terms as state senator from Washington County and made a notable record during his legislative service. For many years he was county health officer.

REPORTS OF SOCIETY MEETINGS

WASHINGTON

KING COUNTY MEDICAL SOCIETY

Chm., W. G. Griswold. Sect'y., J. E. Hunter

The Medical Section of King County Medical Society held a meeting at Seattle, Wash., Feb. 18, 1924.

Dr. G. H. Mohr gave the report of the Special Committee, appointed to make a survey of the schools of the city for disorders of the thyroid gland. In the schools of Seattle 3160 pupils were examined, with an incidence of pathologic thyroids in boys and girls together of 39.3 per cent. A recommendation was made that the prophylactic administration of iodine in some form be made general in the public schools and also that the survey be extended to the entire county.

Dr. W S. Griswold presented a number of pathologic slides which showed the development of the various forms of thyroid pathology.

Dr. A. R. Robertson gave a comprehensive classification of the various pathologic types and brought out the differences from the gross and microscopic standpoint.

Dr. H. Wheelon read a paper on The Medical Treatment of Goiter (see page 117).

In discussion Dr. P. V. von Phul stressed several important points brought out in the papers and suggested that the medical society recommend that the survey conducted by the committee be extended to the whole county and report to the society at three months intervals.

Dr. B. T. King cautioned against overenthusiasm for iodine therapy in simple goiters, but stressed its value in some cases of exophthalmic goiter. He cited Plummer's theory that in exophthalmic goiter the thyroxin radical is deficient one iodine radical which is replaced by iodine feeding. In contrast the hyposecreting adenoma has its full iodine quota.

Dr. Mosiman gave a short talk on circulation of the thyroid in its relation to pathology. Dr. J. T. Mason elaborated on the different types of goiter and their development. Dr. H. J. Davidson mentioned the x-ray treatment of the adolescent type of goiter. Dr. D. C. Hall elaborated on the committee report.

PIERCE COUNTY MEDICAL SOCIETY

Pres., S. M. MacLean; Secty., W. B. Penney

The regular meeting of the Pierce County Medical Society was held in its rooms, Jan. 8. 1924, Vice-president Edwin Carlsen in the chair. Minutes of the previous meeting read and approved.

Mr. Benton, of the collection agency, spoke of collecting delinquent accounts. He discussed the methods used by the King County Medical Society of Seattle.

PROGRAM

Artificial Pneumothorax and Modern Methods in the Treatment of Pulmonary Tuberculosis was read by Dr. John F. Steele. Discussion by Drs. Quevli and Penney.

BUSINESS

The application of Dr. P. F. Guy was read and referred to the Board of Trustees.

A communication was read from Dr. Tymms, from Balitmore, also a letter from Dr. J. P. Kane.

A communication from the Seattle Surgical Society was read, inviting members of the Pierce County Society to a meeting in Seattle to honor Dr. Dean Lewis, Jan. 11, 1924.

The regular meeting of the society was held in its rooms, Jan. 22, Vice-president Edwin Carlsen in the chair. Minutes of the previous meeting read and approved.

PROGRAM

Foreign Bodies in the Esophagus, Dr. B. A. Brown. This was a report of a case of a bone in the esophagus at the level of the sixth vertebra which was removed by open operation after unsuccessful attempts by emesis and by the esophagus. The paper was discussed by Drs. Hyslin, Kinnear and Bohn.

Cesarean Section; 130 Cases over a Period of Fifteen Years without a Death, Dr. R. J. O'Shea, of Seattle. The paper was discussed by Drs. Hicks, Charles McCreery, Kinnear, Hyslin, Fishel, Nace and Carlsen.

BUSINESS

Dr. P. F. Guy was unanimously elected a member of the society.

SPOKANE COUNTY MEDICAL SOCIETY

Pres., C. E. Butts; Secty., G. H. Anderson

The regular meeting of the Spokane County Medical Society was held Feb. 14, at 8:00 p.m. in the Assembly Room of the Old National Bank Building, Spokane, Wash. The minutes of the previous meeting were read and approved.

Dr. R. F. E. Stier made a report for the autopsy committee, showing a deficit. Dr. Butts asked for an expression of opinion whether or not this committee should be continued. The society voted to continue it.

Dr. Price read a paper on "Paralysis of Left Recurrent Laryngeal Nerve in Association with Mitral Stenosis."

Dr. Paul A. Turner gave a paper on "Periodic Health Examinations."

Dr. Langworthy gave a case report.

A letter from Dr. West, president of the State Society, was read and the resolution therein suggested was adopted by the society, with the motion that a copy of the resolutions be sent to the committee on Ways and Means, House of Representatives, and to the state senators and representatives. The resolution reads as follows:

1. Abolish the Narcotic Tax. It is an indefensible nuisance.
2. Reduction of 25 per cent tax on earned incomes.
3. Reduction of expenses incident to postgraduate work and medical meetings.

The amendment to the bylaws proposed by Dr. Rose was defeated twenty-six to three.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

Pres., J. T. Dowling; Secty., M. J. Morris

The Academy held its meeting in Seattle Feb. 19.

The ppaer of the evening was read by Dr. Conrad Jacobson on "Trigeminal Neuralgia." He differentiated this from allied conditions by its paroxysmal, lightning-like, intermittent and excruciating character, starting in the peripheral nerve endings and radiating towards the ear. The present radical operation of transection or avulsion of the sensory root with preservation of the motor branch makes an almost perfect operation. He discussed the indications for the various procedures of choice, the palliative neurectomies and alcohol injections for the separate branch involvements and the radical operation for the separate relief of the major condition, the details of these procedures being indicated on the skull and by lantern slides. The mortality rate is extremely low in the hands of those skilled in the special technic.

Discussion of the paper was opened by Dr. N. D. Pontius, followed by Drs. Gray, McBeth and Harter.

Nasal Operations in Bronchial Asthma. In analyzing ninety-four consecutive cases of bronchial asthma that have been under his personal observation for a number of years, Morris H. Kahn, New York (Journal A. M. A., Feb. 16, 1924), had the opportunity to notice the effects of nose and throat operations on thirty-three of these. In fifteen cases, relief of nasal obstruction was obtained. In two of these, atrophio rhinitis resulted as a serious sequel. In the other cases, the operation was of no benefit. In most cases the improvement that resulted, even as concerned the local condition, was only temporary and incomplete; and in many cases the local condition for which the operation was performed recurred.

PUBLIC HEALTH LEAGUES

SPECIAL ARTICLES FROM CONTACT COMMITTEE

Under an arrangement just completed each medical issue of the League **Messenger** will have a special article from a member of the Contact Committee of the Washington State Medical Association. This committee is the means of direct organization contact between the Medical Association and the Public Health League, and the findings of these committees on issues of public interest are presented to the public in due course under the League plan of publicity. The first of these articles was prepared by Dr. C. F. Engles, chairman of the Social Hygiene Committee and is entitled "Are You Guilty or Not Guilty" This article is a direct plea to the physicians of the state to use more care in the diagnosis and care of the so-called social diseases.

THE GORGAS MEMORIAL

The effort of the officers of the Gorgas Memorial Institute to establish organization in Washington has received the commendation of the League. The plan outlined calls for one hundred physicians in the state who will make a definite contribution to this cause and serve as a special committee in this district. Dr. Franklin Martin, executive chairman of the Institute, in addresses at Seattle and Tacoma, stressed the importance of support in this great national enterprise of health. From early returns it is evident that full membership will be attained in Washington. The League is particularly interested in this move, for it involves additional publicity on the issues of health and will make available for Washington more data suitable for public consumption. That date is far ahead, when there is any danger of an oversupply of this kind of information.

ENFORCING THE PROFESSIONAL LAWS

The Department of Licenses has been making a serious drive to enforce the professional laws of the state. The first point of attack has been those dentists who are practicing without a license. Under the recent Dental Act provision was made for an examination for those who had been practicing this profession in the state for seven years or more. More than a score of these alleged dentists failed to qualify by examination, but a number of them have gone merrily on with their law violation. Arrests have been made in Tacoma, Seattle and various other cities in the state and heavy fines, in most instances, have been imposed. The department officers expect to continue this law enforcement crusade until Washington is "cleaned up" of these undesirables.

A prominent practitioner of the healing art in Seattle was hailed into court the other day and his trial set for the near future. This particular "healer" was at one time a licensed physician and surgeon. His license was revoked. Then he went over to Olympia and qualified as one of Washington's family of drugless healers and continued, according to the charges filed, to practice medicine as before, advertising as physician and surgeon without that little formality of advising the public of his "drugless" limitations. Others in the different cultist fields have been reached in this Department of Licenses' campaign.

FIGHTING GOITER

The work of the Public Health League in organizing the state in an effort against goiter continues to grow in importance. Several hundred thousand of the chocolate iodine tablets have been distributed and the demand is greater now than at any period in the campaign. It was felt that the interest might lag in the latter part of the school year, but many more schools have signified their purpose of establishing this treatment.

The report of the King County Goiter Committee, consisting of Drs. Hall, Mohr and Hofrichter, covering findings in schools in King county outside the city of Seattle, indicates a goiter incidence average of 39.3 per cent. The indicence shows that thyroid enlargement runs almost the same in boys as in girls, which is contrary to the general impression obtained from examinations in some of the middle western and eastern schools. Three thousand pupils were examined by this committee and formal endorsement was given of the League plan of administering 10 mg. of iodine once per week for the school year as a preventive of goiter.

League officials are much impressed with the public interest in this state-wide prophylactic drive and by the large number of communities which have determined to begin the treatment on a public health scale. They point out that the campaign is not over, it has only begun, and the beginning of the new school year next September will find the League better organized to reach every community in the state. With additional data from the various communities in Washington and in other states, and supported by the great publicity which has resulted from this drive, the goiter campaign will even be more effective and far-reaching in the school year 1924-25.

OREGON

CHANGE OF TITLE

At a meeting of the executive committee of the League for the Conservation of Public Health, of Oregon, late last month, it was decided to change the title of the League to "Oregon Public Health League." This designation seems preferable to the original title, which was somewhat clumsy, owing to its length. The new designation is easy for speech, is indicative of the purpose for which the League exists and will be easily comprehended by the public.

The new executive secretary is Mr. Frank S. Ward. The League is to be congratulated upon securing the services of Mr. Ward, who is experienced in organization work, having been connected with other bodies working along similar lines to those of the public health league. He proposes at once to visit the entire state, meeting the local county societies in the interests of the League, and to stimulate an interest for the inclusion in the Oregon State Medical societies of all eligible physicians of the state.

IDAHO
SUPREME COURT DECISION

For the past six months the well-known chiropodist case has been before the Idaho supreme court, a decision being handed down on December 31. The gist of the decision is contained in the following abstracts, relative to the question whether or not chiropody involves the practice of medicine and surgery.

"Respondent contends that the chiropodist practices medicine and surgery. With this we cannot agree. Chiropody has long been recognized as an independent calling. The chiropodist is one who treats diseases or malformations of the hands or feet, especially a surgeon for the feet, hands and nails; a cutter or extractor of corns and callosities. (Century Dictionary; Webster's New International Dictionary; Standard Dictionary.) Chiropody has been practiced as a recognized occupation since early in the eighteenth century. (Nelson's Encyclopedia.) It is a well-known fact, of which the court will take judicial notice, that physicians and surgeons do not, and will not, do the ordinary work of the chiropodist. Under a reasonable interpretation chiropody does not involve the practice of medicine or of surgery, either major or minor.

"Until 1923 the legislature of the State of Idaho had divided the practice of the healing art into the several divisions generally recognized, such as medicine and surgery, osteopathy, and chiropractic, requiring those practicing each branch of the art to undergo an appropriate examination and procure a license. It is clear that the purpose of these statutes was to protect the public health and conserve the public safety by requiring those practicing to be competent and qualified. The objects of such laws are, (1) to prevent people being mistreated by incompetents, and (2) to prevent the credulous from being misled and preyed upon. There can be no doubt that the purpose of these laws was to regulate and not prohibit. Appellant claims that the 1923 law should be given the same construction as the earlier laws. She invokes certain recognized canons of statutory construction which are approved by this court in re Segregation of School District No. 58; 34 Ida. 222, 200 Pac. 138.

"To require a chiropodist to obtain the education and license of a physician and surgeon, an osteopath or a chiropractor, is not a reasonable regulation and is utterly unnecessary for the protection of the public. So far as it affects the practice of chiropody, the act is unconstitutional and void. Nothing we have said must be understood to mean that the act is void generally speaking. So far as it affects the branches of the healing art licensed by the statutes and all callings or practices sufficiently related to fall within them, it is valid.

"While we hold that chiropody is a recognized occupation, independent of medicine and surgery, or any other branch of the healing art, a question arises whether all the acts committeed by the appellant fall within the scope of chiropody. We are satisfied that the removal of corns and calluses constitutes chiropody according to its generally accepted definition. We are not so sure about the treatment of Morton toe. The stipulation does not enlighten us as to the definition of that term. According to Gould's Medical Dictionary it is neuralgia of the fourth toe. Whether its treatment, and specifically the method resorted to, fall within the scope of chiropody or constitute the practice of medicine and surgery are questions which cannot be intelligently answered without further evidence.

"The case must stand or fall on the specific charge in the information and the evidence in the stipulation responsive to it. The charge is that appellant treated Mr. O'Donnell, and the evidence shows she treated him for Morton toe by strapping and binding his foot. If that falls within the scope of chiropody she is not guilty. If it falls within the scope of medicine and surgery, she is. The stipulated facts do not make possible an intelligent answer to this question. The burden was on the state to establish her guilt beyond reasonable doubt. This the evidence does not do."

HOSPITAL STANDARDIZATION

Edited by HERBERT E. COE, M.D.

THE APPLICATION OF STANDARDIZATION

In our last issue under the caption, "What Is Standardization," several of the general rules which apply in a broad sense were discussed. Let us now discuss the question of the application of standardization to hospitals.

How far can the executive committee go in the application of the general rules for hospital standardization? In order to discuss this question we must first consider the hospital; second, the medical profession and, third, the patient. Some would place these in reverse order, first considering the patient; second, the physician, and, lastly the hospital. Others might consider the first the physician; second, the patient, and, third, the hospital. For purposes of argument let us assume that each of the three parties is vitally interested in this problem and probably to an equal degree; so it matters not whether we discuss the patient first or last, the hospital first or last.

Hospital standardization has become a permanent factor in every modern hospital, whether it is a 10 or 1000 bed institution. If we grant this, then the question of how far the application of standardization may be applied must be decided by each individual hospital. From the standpoint of the hospital three things may be accomplished; first, better service from the attending physicians in the form of case records which protect the hospital; second, in ease of carrying out the physicians' orders, which aids the hospital and the nursing personnel, and, lastly, cooperation on the part of the physicians in aiding the carrying out of these orders. All the things included in the latter cannot be discussed here, but a few should be mentioned; careful diagnosis before operation, consultations in all questionable cases, completion of case records for purposes of statistics and future reference, cooperation between the attending men, the development of a spirit of loyalty to a single institution, a greater interest on the part of the nursing personnel which results in strengthening the training school for nurses. These are but a few of the things that develop from the standpoint of the hospital.

Medical Personnel. From the foregoing remarks one can easily see that the medical personnel means more to the hospital than any other single factor. The hospital building may be obsolete or brand-new, its standing in the community may have been excellent, but under the new order of things standardization now becomes the deciding influence as to its future standing. The hospital, therefore, must be very jealous of its personnel. In the first place, loyalty must be considered; every physician and surgeon who is permitted the privilege of taking patients to an institution can do so only on condition that the interests of the hospital will be protected at all times. This does not mean to stand by the hospital when things are palpably wrong. It means to aid the hospital in keeping everything right.

The second qualification for attending men is honesty. Sooner or later the hospital board of trustees must make their decisions. They alone have the right to say who shall or shall not be permitted to have service in a hospital. Since they alone have the right to say this man shall do surgery, and this man shall not be permitted to do surgery, there is a moral responsibility which they must assume toward the public. Gradually the public is beginning to look upon the hospital as a bulwark of protection and, just so far as the hospital protects the patient in the matter of surgery, just so much higher will it stand in the eyes of the community. Some day standardized hospitals will say to a young man, "Equip yourself over a period of years to do surgery and you may become one of the chief surgeons in our institution and only after such preparation. In the meantime bring your other cases to the hospital, so that you may develop a clientele which will recognize your ability as a general diagnostician and surgeon. We will help you build for your future." In the same way they will say to another young man, "You are not qualified to do surgery, but would make a fine internist. Come to our hospitals and be associated with the internists of our institution and after a few years you will take their place as vacancies occur." This will apply not only to the large institutions but to the small ones in the smaller communities. The specialists in the minor fields will not be developed in the small institutions, but must of necessity go to the larger centers.

Lastly, the medical personnel must be composed of men who can work together. The day for petty jealousies, for small minded prejudices, for criticism of this man and that man on the slightest pretext, has gone by. The hospital must put the stamp of approval on a man and his fellows must abide by their decision, but the hospital that includes in its personnel men who never have and never can work together is making a great blunder. Better to do away with a trouble maker, tho he may be fine in his particular field. and build up a staff of men who can work in harmony together.

From the standpoint of the patient the application of hospital standardization, as understood today, means two things; first of all a sense of security on entering a standardized hospital. This is an accomplished fact today. Only two things can deny a man the right to take his cases to a hospital; first, because it is not the pleasure of the board of trustees that he take his patients there. This is established by law. "The supreme court of Wisconsin, in 1923, in a case involving the La Crosse Lutheran hospital, upheld a ruling by a circuit court to the effect that the power to manage the affairs of the hospital corporation includes the power to exclude physicians from the privilege of practicing therein." This ruling gives any hospital board the right to exclude any physician from practicing in the hospital. Second, the staff of the hospital can recommend to the board of trustees that a certain physician be excluded from practicing in that institution. At the present time it is the custom to give the physician an opportunity to defend himself, this defense, together with the reasons why the staff feel he is not competent to serve on that staff being presented to the board. However, if the board of trustees has confidence in a staff, the suggestion that a man be dropped is usually carried out without a question. No executive staff is going to deny a man the privilege of the hospital until after repeated examinations of his records. Because of this fact there are few men who will be excluded because of action on the part of a staff.

In conclusion, one might state from the above that the rules of hospital standardization can and should be applied by the hospital authorities, should be accepted and developed by the medical staff, and should be looked upon as a source of protection by the public.

The Anatomic Findings in Cases Simulating Pulmonary Tuberculosis. Seven cases are cited by G. Y. Rusk and Victor Randolph, San Francisco (Journal A. M. A., Feb. 9, 1924), that were considered clinically as pulmonary tuberculosis, but which proved to be nontuberculous. In one of the seven cases, both the clinical and the gross pathologic diagnosis was tuberculosis, but the microscope disclosed another condition. The cases were found at necropsy to be: (1) primary carcinoma of the lung; (2) pulmonary emboli from thrombosed pelvic veins; (3 and 4) pneumonoconiosis; (5) carcinoma in the lung secondary to carcinoma of the stomach; (6) pleural mesothelioma, and (7) sarcoma in the lung secondary to sarcoma of the leg, eleven years after amputation.

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Modern Aspect of the Circulation in Health and Disease. By Carl J. Wiggers, M. D., Professor of Physiology in the School of Medicine, Western Reserve University, Cleveland, Ohio.. Second Edition, thoroughly revised. 204 Engravings, 662 pp. $7.50. Lea and Febiger, Philadelphia and New York, 1923.

This very comprehensive volume is divided, like Gaul, into three parts. The first treats of the maintenance of the circulation in health. In it are described all the most recent additions to our knowledge concerning the physiologic mechanism of the heart and blood vessels. There has been an enormous amount of research and a corresponding augmentation of our information concerning the circulation since the discovery of the electrocardiograph and other instruments of precision. This section comprises 177 pages.

In the second section will be found graphic methods for the clinician, to which 231 pages are devoted. In this are considered the record of the pulse and heart beat by special instruments and x-rays. The final section of 232 pages is given up to the description of diseases of the heart and circulation. In this the clinical findings are coördinated with the more purely scientific results of research. Pathology and symptomatology are considered but etiology and treatment are omitted, except in conditions of the heart directly due to certain diseases. For instance, there are to be found descriptions of heart disorders resulting from pneumonia, diphtheria, typhoid fever, etc. In this connection the rapid heart, so frequently seen after the influenza bronchopneumonia, is noted. In these cases there is no evidence of myocarditis, with irregularity or enlargement of the heart, and the reviewer had hundreds of these patients treated in the Army by gradually increasing setting-up exercises, and with the most gratifying results.

This book, while written from the standpoint of the scientific investigator rather from that of the clinician, is a thoroly practical work as well. Wiggers has had an enviable reputation as a student and explorer in cardiology for twenty years. There is probably no specialty in medicine that has been more enlarged than that of cardiology in the past decade. Mac Kensie and Lewis have put the arrhythmias on a sound clinical basis. Herrick and Smith have classified and elucidated coronary disease. The War enlightened us on irritable heart. But because of this rapid advance in our knowledge of the heart there is probably no subject on which medical men of good general ability seem less informed. Even the recent graduates in medicine are equally deficient. For this reason the present volume can be highly recommended as clearly and authoritatively presenting the basic facts, methods and apparatus, on which rest our modern scientific and clinical knowledge of the physiology and pathology of the circulation and the treatment of its disorders.

Winslow.

The Mechanics of the Digestive Tract. By Walter Alvarez, M. D., Assistant Professor of Research Medicine, George Williams Hooper Foundation for Medical Research, University of California Medical School. Illustrated, 192 pp. $3.50. Paul B. Hoeber, New York. 1923.

This most remarkably revolutionary view of the physiology of the motility of the intestinal canal has added to it, beside the physiology of that tract, much clinical wisdom. It is most fascinating in its interest, easily readable and well worked out in its chapterization. It begins by taking up the autonomy of the intestinal canal, describing the evolution of the nervous system in its relationship and comparison to the nervous system of the intestinal canal, and describes its functions, reasoning that its influence is modifying and not originating so far as peristalsis is concerned. The author elaborates upon the myogenic nature of the contractions both by direct experimental work and by analogy with lower forms of life. He describes admirably the various types of peristaltic activity and has rewritten in more readable form than in his original papers his theories of the metabolic gradient. Comparison with gradients in other organs and gradients elsewhere in nature lend enchantment as well as clarity to his explanation. He has apparently studied the gradient of the stomach wall most intensively, probably because he has found there the chief objection and difficulty to the full acceptance of his theory, namely, the presence of some unknown modifier of the peristaltic rhythm, inhibitory or slowing in nature.

Alvarez's "practical application of the gradient idea" is a beautiful bit of deductive reasoning. His chapter on reverse peristalsis is the only satisfactory explanation of such symptoms as vomiting, regurgitation, heartburn, belching, nausea, foul breath, coated tongue and biliousness extant. He has met most of the opposition to his theory in a most convincing manner in a chapter devoted to "Objections and Difficulties." The book contains much of value and interest to the surgeon, internist and roentgenologist. It is comprehensive, absolutely original, and will be of help to every physician who will take the bit of time necessary to read it. It is to be hoped that this review will call the attention of our readers to a most important volume.

Epplen.

Hernia. Its Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis and Operative Treatment. By Leigh F. Watson, M. D., Associate in Surgery, Rush Medical College. 232 original Illustrations. 660 pp. $11.00. C. V. Mosby Co., St. Louis. 1924.

This volume must be ranked as the authoritative work on hernia at the present time. It is a complete consideration of the subject for practical purposes, and from the historical introduction to the medical legal aspects it is comprehensive and readable. At a moderate estimate the recurrence in the oblique type of inguinal hernia is ten per cent in the hands of all operators, and even one or two large institutions have recently reported large series, where it has been

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possible to have examinations made by surgeons of the staff, and the percentage has been found to be in that neighborhood. A legitimate percentage of recurrence is usually regarded as two or three per cent. This volume adequately presents causes of recurrence and the means of its prevention. In an equally adequate manner are described the numerous appropriate modifications of the standard procedures for radical cure. The successful treatment of any form of hernia depends, as it does elsewhere, upon the surgeon's judgment in the selection of the general type of operation with suitable minor variations for the individual case. The excellent illustrations are most helpful in following the anatomic details and operative technic at the same time. The chapter on local anesthesia most clearly describes the advantages and method of this procedure, and emphasises its importance, especially in the oblique type of inguinal hernia.

FORBES

Genitourinary Diseases and Syphilis. By Henry H. Morton, M.D.,, F.A.C.S., Professor of Genitourinary Diseases and Syphilis in Long Island College Hospital, etc. Fifth Edition, Revised and Enlarged. With 328 Illustrations and 38 Full Page Colored Plates, 712 pp., $10.00. Physicians and Surgeons Book Co., New York, 1924.

This is the best single volume on this subject the reviewer has read. It is so constructed in sequence that the reading of one chapter calls for a scrutiny of the following. The volume is concise, scientific and for a reference book, where easy accessibility of any topic is the utmost need, it is admirably adapted. The pathology and treatment of gonorrhea is a masterpiece. Surgical conditions of the genitourinary tract, pyelography and many voluminous subjects are not given as much space as one would wish, but these could not be dealt with in a more thoro manner in space alotted. The illustrations are profuse and of superior character. Every physician treating genitourinary diseases should read this book.

WHITLOW.

Management of the Sick Infant. By Langley Porter, B.S., M.D., M.R.C.S. (Eng.) L.R.C.P. (Lond.) Professor of Clinical Pediatrics, Univ. of California Medical School, etc., and William E. Carter, M.D., Assistant in Pediatrics and Chief of Out Patient Department, Univ. of Calif. Medical School. Second Revised Edition. Illustrated. 659 pp., $8.50. C. V. Mosby Co., St. Louis, 1924.

The second edition of this extremely valuable book contains minor corrections and additions. A discussion of intracranial hemorrhage is added, incorporating recent clinical observations relative to that condition. A most useful section on prematurity is new, much practical information as to the care and feeding of the premature infant being presented. This well meets many of the needs of the physician in caring for his infant patients.

MOHR.

Pruritus of the Perineum (Pruritus Ani, Vulvae and Scrotum). By Joseph Franklin Montague, of the Rectal Clinic, University and Bellevue Hospital Medical College. Foreword by George David Stewart, M. D., President of the New York Academy of Medicine. With thirty-seven Illustrations. 186 pp. $3.50. Paul A. Hoeber, Inc., New York, 1924.

The author states that nowhere in medicine can one find an ailment so grossly misunderstood and so empirically treated as pruritus of the anus, vulva and scrotum. There is a profusion of illustrations, describing the pathology of this condition. He mentions two clinical types, direct and indirect pruritus. In the former one finds specific causes for the condition, while in the latter there is no primary pathology, the condition being a subjective manifestation of another clinical entity. He states that the literature presents more than four hundred formulae which have been given as a cure for this disease. The most common cause of failure is that the average practitioner does not recognize the indirect type of this condition. He finds great relief for these cases in the use of bromides and phenobarbital from their effects on the nervous system. He presents numerous formulae for the local relief of the condition, together with a discussion of x-ray, radium therapy and ionic medication. The cure of the condition is accomplished by the operation of undermining the skin with a specially devised pair of flat scissors, introduced thru four incisions at a distance from the anus, and four adjacent to this opening, thru which the anal surfaces can also be severed from underlying tissues. This is a very valuable and suggestive work for the treatment of this troublesome condition.

SMITH.

Geriatrics. A Treatise on the Prevention and Treatment of Diseases of Old Age and The Care of The Aged. By Malford W. Thewlis, M. D., Editor, Medical Review of Reviews, etc. Second Edition, Revised and Enlarged. 401 pp. $4.50. C. V. Mosby Company, St. Louis. 1924.

The author states that no class of patients are so much neglected as the aged. There is no journal in the world devoted to this class of people. Too often they are considered economically worthless and do not receive treatment which their diseases demand. In discussing the value of old age a lengthy list is cited of men in the seventh and eighth decades who have accomplished noticeable achievements in all branches of endeavor. The author emphasizes the necessity of occupation for the aged, both from a psychic and physical standpoint. Diseases which are peculiar to old age are discussed, pertaining to the circulatory and secretive systems and many suggestions offered for their relief. The standard for old age is not a fixed one, the fact being mentioned that the arteries of some men at thirty-five are the condition of others at seventy. The perusal of this volume is an inspiration to devote more time and attention to aged patients.

SMITH.

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Fighting Foes Too Small to See. By Joseph McFarland, M. D., Sc. D., Professor of Pathology in the Medical Department of the University of Pennsylvania. Illustrated with 64 Engravings. 309 pp. $2.50. F. A. Davis Company, Philadelphia. 1924.

This volume comprises the substance of a series of lectures delivered before lay audiences on the general subject of microbiology. Its purpose is to present in language and terms understood by a nonmedical audience facts concerning bacteria, their influence in the causation of disease and the means of preventing their activities. The problems are comprised in the war word, preparedness. "We must fight these foes too small to see." Beginning with a description of the microscope, there follows an historical review of the origin of life. The germ theory of disease is discussed and the efforts of microorganisms described in the sphere of nature as well as the roll they play in the diseases of man. The author describes various epidemic diseases of the past and the manner of their control, so that now some are chiefly matters of history. The conclusions of these discussions are summed up thus: "It is more easy to prevent disease than to cure it; it is more simple to prevent an epidemic than to stop it." Reading of this book by the laity would greatly enhance the prevention of disease.

The Medical Clinics of North America. (Issued Serially, one number every other month.) Volume VII, Number IV, January, 1924. (University of Kansas Number.) Octavo of 313 pages with 66 illustrations. Per clinic year (July, 1923 to May, 1924). Paper $12.00; Cloth $16.00; net. Philadelphia and London. W. B. Saunders Company.

This volume presents clinical reports from physicians connected with hospitals of the University of Kansas and other hospitals of the state. Milne has an interesting discussion of Hodgkin's disease, based on reports of four cases. Logan discusses intestinal invalids, citing several cases suffering from various types of constipation and different diseases of the colon. Six contributions offer clinical reports dealing with various phases of syphilis. These medical clinical reports from different cities of the country furnish instructive material relating to many diseases, worthy of careful consideration.

The Medical Record Visiting List. This is a continual visiting list, good for any year. Contents: Calendar, Estimation of the Probable Duration of Pregnancy, Approximate Equivalents of Temperature, Weight, Capacity, Measure, etc., Maximum Adult Doses by the Mouth, in Apothecaries' and Decimal Measures. Drops in a Fluid Drachm. Solutions for Subcutaneous Injection. Solutions in Water for Atomization and Inhalation. Miscellaneous Facts. Emergencies. Artificial Respiration. Signs of Death. Hints on the Writing of Wills. Table of Signs. Visiting List with Special Memoranda. Consultation Practice. Obstetric Engagements. Record of Obstetrical Practice. Record of Vaccination. Register of Deaths. Nurses' Addresses. Addresses of Patients and others. Cash Account. For 60 patients a week, $1.75 in red or black morocco; for 30 patients, $1.50; for 90 patients, with dates, only $2.25. William Wood & Co., New York.

RESOLUTIONS OF CONDOLENCE

WHEREAS, Divine Providence has seen fit to take from our midst our colleague and fellow member of the Staff of Providence Hospital of Seattle, Dr. Daniel Buckley, and

WHEREAS, By his death we have lost a valued member of the medical profession, the city an honorable and loyal citizen; and his family a devoted husband and loving father, and dutiful son, therefore be it

RESOLVED, That we, the members of the Providence Hospital Staff, assembled in regular session, extend to the wife and family and mother of our deceased colleague, our sorrow and heartfelt sympathy in their bereavement, and pray God in his mercy to sustain and help them to bear patiently their loss; and be it further

RESOLVED, That the regular monthly meeting of our Staff on Wednesday, January second, one thousand, nine hundred and twenty-four, be adjourned as a token of our sorrow and esteem, and be it further

RESOLVED, That a copy of these resolutions be presented to the wife and family and mother of our late member, Dr. Daniel Buckley, that a copy be preserved with the records of our Staff and also a copy be given to Northwest Medicine for publication.

Seattle, Wash., Jan. 2, 1924.

SISTER SUPERIOR
SISTER VINCENT FERRIER
G. M. HORTON, *Pres.*
S. F. WILTSIE, *Sec.*

C. D. SHANNON,
E. F. CHASE,
M. N. GARHART,
Committee.

WHEREAS, Divine Providence has seen fit to take from our midst our colleague and fellow member of the Staff of Providence Hospital of Seattle, Wash., Dr. John W. Hunt, and

WHEREAS, By his death we have lost a valued member of the medical profession, the city an honorable and loyal citizen; and his family a devoted husband and loving father, and dutiful son, therefore be it

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ORIGINAL CONTRIBUTIONS

MALIGNANCIES OF THE ORAL CAVITY*

JOSEPH A. PETTIT, M.D.
PORTLAND, ORE.

We will endeavor to present this subject in a manner somewhat out of the ordinary; that is, instead of drawing conclusions at the end of the paper, we will state as a preface a few salient conclusions in connection with these malignant tumors, and take them up individually for consideration as we proceed.

1. Malignant tumors in and about the oral cavity almost invariably give a history of chronic irritation preceding the development of the tumor. A study of the malignancies of the oral cavity lends evidence to the conception of chronic irritation as the exciting cause of the neoplastic growths, whether malignant or benign. This evidence is especially conspicuous because of the fact that the early stages of the malignant lesions are subject to ocular observation, as well as the preceding focus of irritation.

2. An observable, antedating lesion of some form of irritation, either mechanical, bacterial, chemical, or thermal, is usually found at the primary focus of malignancy in the oral cavity. This preceding pathology may be relatively transitory in its existence, or the malignancy may be found springing from some part of a benign hyperplasia, due to one of these forms of chronic irritation. We recognize the fact that continued irritation produces a reaction on the part of the tissues in the nature of a protected hyperplasia. Calluses appear on the hands; and when the individual, especially in the bare-footed races, commences his ambulatory life, the skin on the sole of the foot thickens, as needed, in a maximum degree. The skin of all parts of the body becomes thicker where extra service is required. In the open wound, unprotected by epiblastic tissues, the normal process of granulation tissue formation may continue to a temporary protecting hyperplasia. The normal cell proliferation for physiologic requirements may be so overstimulated, or stimulated for so long a time, as to lose the physiologic balance or control, and then the malignant hyperplasia is turned loose. A study of the oral lesions so accessible to observation from beginning to end gives rather convincing evidence to our conception of the birth of a sarcoma or cancer in other parts of the body, where they are neither observable nor discernable, until there has been a considerable development of the neoplastic growth in the pathologic tissue of the traumatized area.

3. We find a greater number of slow growing or relatively benign malignant tumors in the oral cavity than in any other part of the body. A rodent ulcer of the face and an epulis of the oral cavity, of

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* Read before Portland City and County Medical Society, Portland, Ore., Nov. 21, 1923.

which we will speak more fully later on, are conspicuous examples of this fact.

4. The study of the pathology of the neoplasms of this area gives credence to our conception of the analogy of the tissue reactions which occur in inflammatory reactions and the neoplastic growths. Microscopic pathology gives us a lucid and comprehensive picture of what is termed the reaction or cell resistance to inflammatory invasion. In the acute inflammatory reactions we have increased vascularity with the interstitial hemorrhage, and the microscope gives us a picture of the phagocytes, red blood cells and fibroblasts. In a more slowly developing chronic inflammatory picture, we find mostly lymphocytes, and also a great predominence of the fibroblasts and the formation of the fibrous tissue, which fibrous tissue is the natural defensive wall built up by the tissues in all parts of the body in its defensive processes. It is a known fact that the tissues in and about the oral cavity are either structurally, or by force of training, conspicuously qualified to successfully combat bacterial invasions. It is not improbable, and it is our belief, that this same defensive process or power throws out the same type of fibroblastic elements against the proliferating neoplastic cells, as against the proliferating bacteria of the inflammatory group. The degree of virulence of malignancies is measured by the success of the contiguous tissues to adequately incapsulate the invading and multiplying cells. It is reasonable to assume that this same defensive ability against bacterial invasion will produce a salutary effect in the other type of invasion, namely the multiplying neoplastic cell.

5. In malignancies of the oral cavity, metastasis beyond the cervical lymph collar is rare. A very small percentage show any secondary involvement of the thorax, the liver, or other parts of the body; and not more than 10 per cent of those who die of cancer of the oral cavity present other lesions than those which develop by continuity of tissue and cervical malignant lymph adenoma.

6. The percentage of cure of cancer of the lip probably exceeds that of any other location. This is due, first, to the early recognition by reason of its superficial location; and, second, by the more important fact that the conspicuousness of the lesion impells the possessor to submit to an earlier extirpation. The thought has often come to our mind that, if the stomach or the uterus could be subjected to the same close scrutiny and early observation, the percentage of cure of cancer of these two organs would be greatly increased, even tho metastasis occurs earlier in these locations than in the lip. Lesions within the oral cavity, while observed almost as early in their growth, do not stimulate the possessor to submit to an early treatment, because they are not unsightly to others; and probably on this account the percentage of cures is less than it should be.

Figures from the district of Columbia show that in deaths from cancer of the lip in women more than 70 years of age, the colored women, many of whom are accustomed to smoking the clay pipe, show a proportion of 1:4 over white women who are not subject to this type of chronic irritation. This larger proportion of cancer of the lip in the colored women is conspicuous in the face of the fact that cancer is less frequent in the colored race. Couch, in this connection, advances the theory that the irritation comes, first, from the local anemia of the pressure of the pipe stem; and, second, from the chemical and thermal actions. Brewer has compiled a series of 3,889 cases of cancer of the lips and cheeks. In analyzing these figures, he finds that cancer of the lower lip occurs twelve times as frequently as cancer of the upper lip, and that 95 per cent of cancer of the lip occur in men who have, heretofore, been smokers.

7. The rapidity of growth, or the malignancy of tumors, depends upon the activity of the nuclei for division and formation of new cells, and is inhibited by the defensive process of contiguous tissues heretofore referred to. The individual cancer cell of the scirrhous cancer is not dissimilar to the individual cancer cell of the medullary cancer. The slowly growing scirrhous cancer presents inhibition of karyokinesis by the abundance of fibroblasts and fibrous tissue, while the medullary cancer presents but little of this inhibiting structure. The small round cell sarcoma represents a rapid cellular subdivision, wherein the nucleus divides to form two cells before the protoplasm can increase to the dimensions of the large round cell. This spells a greater degree of malignant activity and in these tumors we find a mediocre amount of fibrous inhibition.

8. The effectiveness of the lymphatic collar is demonstrated by statistics. Crile reports that search of literature reveals the fact that in 4,500 reported autopsies not more than 1 per cent presented foci in distant organs and tissues beyond the cervical lymphatic glands. As a matter of fact, cancer remains a local lesion more frequently than we suppose. A

series of 10,000 autopsies on persons, who have died of cancer of various parts of the body, reported some years ago, discloses the figures that in 19.5 per cent of cases the cancer had remained a local lesion without dissemination up to the time of death. In these figures face cancers stand high in percentage, while a cancer of the cervix and of the stomach show less than 3 per cent presenting no metastasis. Should the figures have included those cases where metastasis occurred only in the glands of the neck, and in no other parts of the body, the 19.5 per cent would have been considerably increased by the records of the oral cavity cancers.

Statistics of this kind should give us a pass key to the treatment of malignant growths. If so many remain a local lesion till death ensues, cure is possible in a larger percentage of cases than we have been wont to believe. Some failures may be due, first, to inadequate removal; second, to transplantation of cells in the fertile wound area; third, to delayed removal until the spread of the growth into contiguous areas has become so extensive as to prohibit adequate removal; fourth, incomplete removal of the lymphatics. The adequacy of a thoro removal—thoro insofar as the eye can observe or the hand palpate—may be greatly enhanced by the follow-up treatment of some radioactive element, referred to later, that will penetrate into the contiguous visibly normal tissue, ferreting out any migrating malignant cells and killing or sterilizing them.

9. The cervical lymphatic glands are early involved in cancers growing on the lip or on the floor of the mouth; but as a rule in cancers of the mucous membrane of the cheek or of the gum tissue, metastatic involvement of the glands of the neck seldom occurs until the later stage in the growth of the malignancy. Uusually the glands are involved on the same side on which the growth is situated, excepting in the case of cancer of the middle of the lip or the tongue. Cancer on one side of the tongue will frequently give a lymphatic involvement on the other side of the neck, usually well down, as its primary metastasis. The lymphatics of the cervical region are abundant and freely communicate. When a straight line metastasis occurs and the stream is blocked by a malignant lymph adenoma, the current is side-tracked, and then we find the metastasis occurring at various irregular points. Therefore, if there is any degree of lymphatic involvement, or if it has existed for any length of time, we may expect metastasis at any point in the neck, both on the same side and on the opposite side.

10. A study of the habits of metastasis of cancer gives the key to the line of treatment. It is usually not necessary to do any radical work on the neck in the early stages of carcinoma of the mucous membrane of the cheeks or of the gingivae, whereas it is important in the early cases of cancer of the lip, the tongue or the floor of the mouth. In cancer of the tongue or of the floor of the mouth, there may be no palpable lymphatic involvement in the upper cervical region, but an early involvement of the deep cervical glands close to the clavicle. In any well advanced carcinoma, or one of long standing, any excision of the glands of the neck other than a complete one is likely to be inadequate. In making an excision, the sacrifice of the sternomastoid muscle and of superficial veins should not stand in the way of an effort to save a life.

11. The excision of the malignant growth of the oral cavity should be accomplished with the same degree of thoroness exercised in the removal of a malignant tumor in any other part of the body. The excision must be broad, extensive and complete. The danger of transplantation of cancer cells exists in the oral cavity as much as elsewhere, and the difficulties of preventing such misfortune are greater than elsewhere. The charred tissue left in the pathway of a cautery does not furnish a good culture medium for the transplantation and growth of malignant cells; and, at the same time, a cautery knife kills and sterilizes all cells with which it comes in contact. The safety can be considerably increased by primary cauterization of the growth as a whole. The cautery likewise minimizes hemorrhage, and its burned surface is some protection against postoperative infection.

It is probable that the cautery knife should be used whenever possible; and as a factor of added safety, where the steel knife or bone forceps are used, the surface should be cauterized afterward whenever possible. The effectiveness of heat appears to be maximum in the inhibition of malignant cell growth, as well as in destruction. Were it possible to apply to any cancer area an adequate amount of thermal activity, so that all migrating cells in the contiguous tissue would be affected as well as those in the actual growth, the cure would be 100 per cent. This does not necessarily mean an actual charring or burning of the cells. A normal tissue cell will stand a greater degree of heat than a neoplastic cell without destruction of its nucleus, and it will also regenerate after exposure, whereas the malignant cell will not.

12. It has always appeared to us that the radioactive elements of x-ray and radium are analogous to the thermal elements. It has been claimed that the radioactive element of x-ray acts upon the nucleus and the protoplasm; whereas the radioactive element of radium concentrates on the nucleus. In either event, an adequate application of either should produce at least a temporary sterilization of the cell and should inhibit its proliferation for a time, if not permanently. The radioactive element of thermal heat apparently has the same effect. With these points in mind, it is realized that it is important that some one of the radioactive elements suitable for the part involved, or all three if suitable, should be used in all cases. The disease is a fatal one and should be handled with every available weapon. The fact should also be borne in mind that the sterilization of the neoplastic cells may be only temporary from the use of one application of the radioactive element. In a suitable form the application should be repeated at logical intervals over a great length of time. As a matter of fact, the permanency of a successful cure of malignancy is probably enhanced by the use of deep x-ray therapy at increasing intervals over a long period of time. The normal tissue cells are not injured, and the regeneration of neoplastic cells remotely hidden away, hibernating as it were, may be ultimately completely inhibited.

13. Local recurrences following the removal of a malignant tumor of the oral cavity usually shows a more rapidly growing type microscopically, and increased virulence clinically. A recurrence of the giant cell sarcoma will usually be that of a large round cell, and the next recurrence will show the more rapid growing small round cell sarcoma. The local recurrence of a cancer will show a lessened amount of fibrous tissue inhibition, and a greater degree of mitosis. Local recurrence may be due, first, to an inadequate removal of the gross tumor mass; second, to a transplantation of some cancer cells in the operative wound; and, third, to the proliferation of some migrated cells in the normal tissue. The means for avoiding these two last causes has already been mentioned.

14. The general operative technic of oral malignancies should not be passed by without comment in reference to the important postoperative risks. The proximity of the operative field to the respiratory tract predisposes to the danger of postoperative pulmonary complications. Outside of the danger of postoperative ether pneumonitis, we have the greater danger of postoperative aspiration pneumonia. The anesthesia should be as light as possible, so that the patient will promptly awaken and be able to keep the pharynx and the larynx clear. The fauces should be kept protected with a gauze sponge, and the anesthetic administered through a nasal tube. Thoro hemostasis, which is materially aided by the use of the cautery, is distinctly advantageous.

For years we have always used the extreme Trendelenberg position for operations of any kind in or about the oral cavity and pharynx. The advantages are several: (1) visualization of the operative field is enhanced, as it is thereby placed on a nearly flat surface; (2) the illumination can be made more complete from the headlight of the operator; (3) more assistance can be afforded by the hands of others who stand on either side, while the operator sits on a low stool directly at the head of the patient; (4) the anesthetist stands behind one of the assistants, administering the anesthetic by means of a blower thru a nasal tube; and (5) the greatest advantage of all afforded by this "operative stage setting" is the fact that all the blood, secretions, and debris naturally gravitate to the roof of the mouth or to the nasal pharynx, where they can be readily removed with the sucker or with sponges, without any danger of passing down into the larynx or laryngeal pharynx. This reduces to a minimum the danger of postoperative pulmonary complications, insofar as the operation itself is concerned.

15. It would not be fitting to close this paper without a few words on a type of slow growing malignancy which so frequently occurs in the oral cavity, namely, epulis. The type of tumor called epulis, while essentially malignant, is governed by restrictions which make it amendable to surgical treatment. It is unfortunate that all malignancies are not subject to the restrictions, during their early growth, which govern the epulis tumor. Pathologically it is not infrequently confused with the giant cell sarcoma or benign fibroma. The growth is exceedingly slow, and spreads only by continuity of tissue. It should, when diagnosed early and when properly treated, always yield a cure. It is noted by clinical observation that with each recurrence its virulence increases, and a successful eradication is rendered more difficult. Its location of origin always points to a cause of chronic irritation. Early treatment of epulides is usually given

in the dental chair, and the oral surgeon sees them after a second or third ineffectual removal. The growth of an epulis, as well as its virulence, is increased by each excision. It finally becomes a large round cell sarcoma, and then later a small round cell sarcoma. Nevertheless, its clinical salient characteristic clings to it; namely, it does not metastasize, it grows by continuity of tissue, and it remains a local lesion to the close of the chapter.

It is here as well as in the other malignancies that the heat treatment has a potential influence, either alone or in connection with a surgical excision. One of the best insurances against the recurrence of the epulis when it is first removed is a cauterization of the base. The growth of an epulis is outward, before its recurrence after an inadequate removal, and there is not a deep-seated infiltration with a primary growth. A cautery can readily destroy the proliferating cells at the base of the epulis.

The epulides can distinctly be classified as oral lesions, and their early characteristics should be more generally understood. The appearance of an epulis is generally antedated by the removal of a diseased tooth. The growth at first has all the appearance of an innocent excrescence, protruding thru the aperture in the gum formerly occupied by a tooth. The base may spring from the fibrous tissue of the periosteum, or it may spring from the myeloid tissue inside the alveolar process. The possessor of an epulis usually returns to the dentist who extracted the tooth, and he in turn with facility clips off the growth. This may be done a second or a third time within the succeeding months. During this period the virulence of the neoplasm apparently increases, and the oral surgeon, when consulted, finds it necessary to pursue a rather radical procedure. In the first removal the pathologic report is frequently that of a benign growth; but later removals show easily identified earmarks of malignancy, increasing with each subsequent recurrence. The pathologic section of the cells at the very base tells the true story, when the main mass may appear microscopically benign. If the base is not thoroly chiseled off, or better yet, burned with an actual cautery, it makes its reappearance promptly with increased size and increased microscopic evidence of genuine malignancy.

COMPENSATION NEUROSIS*

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Foreword. Practically every physician in general practice and most of the specialists come in contact with the type of hysteria best classified as "compensation neurosis." For this reason, also because the condition is a common one, I have selected the subject of compensation neurosis for my paper, in the hope that the discussion will prove of general rather than of a limited special interest.

The accident or "personal injury" case, from which the compensation neurosis of civil life is recruited, is usually seen first by the general practitioner, but frequently also by one or more of the specialists. The eye, ear, nose and throat man examines the cases of hysteric amblyopia, deafness and muteism; the orthopedist meets with hysteric backs, contractures and paralyses; the railroad surgeon and industrial surgeon are familiar with both traumatic hysteria and the compensation variety. That the condition is known to the Veterans Bureau was shown in an excellent paper by G. H. Benton, in which he used the interchangeable term "pension neurosis." A distinguished neurologist, Dercum, has written an interesting and practical book on "Hysteria and Accident Compensation," in which the compensation complex is well described.

It may be well in the foreword to emphasize the fact that compensation neurosis is not traumatic neurosis, war neurosis nor malingering, but a neurosis developing as the result of the individual's subconscious reaction to the suggestion that his accident or war experience may be capitalized.

Etiology. Compensation neurosis cases, following an accident, injury or war experience, may be grouped as follows:

1. Individuals receiving no physical injury, in whom hysteric symptoms develop almost immediately as the direct result of the accident or war experience, these symptoms becoming fixed or perpetuated as the factor of "anticipation of compensation" enters the psychic field. In other words, a true traumatic or war neurosis, instead of responding to treatment and disappearing, becomes transformed or transferred into a compensation neurosis.

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* Read before the Thirty-fourth Annual Meeting of Washington State Medical Association, Spokane, Wash., Sept. 20-22, 1923.

2. Individuals receiving no physical injury and remaining free of hysteric symptoms for a considerable time after the original experience, but subsequently developing hysteric phenomena as the result of suggestion to compensatory possibilities.

3. Patients receiving an actual wound or other physical injury, the symptoms resulting from such injury continuing in the form of a neurosis long after complete recovery of the original injury.

4. Patients who have symptoms resulting from an actual physical injury, and in addition an overlap of hysteric symptoms. Symptoms resulting from trauma as a rule tend to ameliorate, but the hysteric manifestations tend to increase in magnitude as the result of repeated examinations, conferences with attorneys, pension awards, etc.

In the consideration of a compensation neurosis or indeed of any form of neurosis, the underlying neuropathic taint or background can not be ignored. Deficient inhibition, emotional instability and an abnormal reaction to suggestion are inherent. The constitutional psychopath and the constitutional inadequate are fertile soil for the development of a neurosis.

In the true war neurosis of the hysteric type and the true traumatic hysteria of civil life there invariably exists an interval of a few hours to a few days ("period de meditation") between the initial emotional or physical shock and the onset of the hysteria, during which time, by a process of suggestion (auto, hetero, or both) the symptoms are developed. The compensation neurosis is, as a rule, slower in onset, altho not always so. In some instances months or even years have elapsed before the disability is discovered. On the other hand, I have known a man, after being in a trolley accident, to send for a lawyer before realizing the need of medical attention.

The psychology of a compensation neurosis complex does not require any special subtlety in its interpretation. Picture a returned soldier who finds his job filled, his pockets empty and his war experience a liability. Realize that he hears of former comrades who are drawing compensation or who are being vocationally trained and supported by the Government. Consider him as being constantly subjected to suggestion from friends and relatives, misguided but well-intentioned welfare workers and last but not least the Veterans Bureau itself. Still another factor must be considered. It is possible that his dollar-a-day, board and lodging during the war may not have contrasted favorably in his mind with the emoluments of his non-military associates, and thereupon a vague, subconscious desire to have matters equalized may have contributed to the complex.

Many of the same factors enter into the formation of the compensation complex, following an industrial injury or other accident occurring in civil life. Here we may have in addition certain other psychologic factors contributing to the complex, In these days of socialistic propaganda, the impulse to take from the corporation or capitalist is omnipresent and who is free from the subconscious desire to obtain redress from some one whom we feel has contributed to an injury.

Symptomatology. The dominant mental characteristics of the individual with a compensation neurosis are those of hysteria in general; deficient inhibition and an abnormal reaction to suggestion. Emotional instability is marked and apperception is faulty. The individual "believes the things which please him and rejects those which do not." He craves attention and sympathy.

The physical symptoms are protean, as one would expect, and are influenced or colored by the nature of the original injury, wound or experience. Almost any condition may be simulated by the hysteric symptoms. In the motor field we find everything from increase of motivity, such as convulsion, spasm and tremor, to diminished or lost motivity, manifested in paresis, paralysis or contracture. Sensory phenomena run the gamut from hysteric pain and hyperesthetic areas, to analgesia and anesthesia. Coming to the special senses, we often find hysteric amblyopia and deafness. Muteism and amnesia are less frequent. Cardiovascular and gastrointestinal hysteric manifestations may also occur.

Diagnosis. It has been said that, while hysteria may simulate almost any known condition, it simulates none exactly, and it is upon the absence of a physical or organic basis for the symptoms that the diagnosis of hysteria is chiefly based. Each case must also be studied from the psychic standpoint, to determine the mental reactions of the individual.

The difficulty in diagnosis is not so much in differentiating between hysteria and an organic condition, but to determine where hysteria ends and malingering begins. Hysteria may simulate even malingering, and while one may be satisfied in one's own mind that the individual is malingering, it is not always easy to prove.

Treatment. The treatment of the compensation neurosis may be considered briefly under three heads: (1) preventive, (2) educational, (3) removal of cause.

Prevention. One of the surest ways to prevent the formation of a compensation neurosis is for the party liable to make a prompt cash settlement. Thus, Schallar (quoted by Dercum), states that in Denmark, where the cash settlement plan prevails, 93.6 per cent of *traumatic* neuroses recover, while in Germany, where the pension system prevails, only 9.3 per cent recover. In other words, the traumatic neurosis becomes a compensation neurosis.

It is a fact well known to neurologists that, where the factor of expectancy of compensation exists in a neurosis following an accident or injury, the symptoms continue irregularly until the case is finally settled, whether it be one month, six months, a year, or even longer; that the symptoms become progressively worse as the time for the trial approaches, reaching their climax as the all-important day arrives. Have we not seen these cases brought into court on stretchers, in wheel chairs, or almost carried in by devoted relatives? And can you not hear the attorney for the plaintiff, as he paints a pathetic word picture of the helplessness of his client and the permanency of his disability? But what happens after the final award? Invariably recovery; usually fairly promptly, sometimes with almost shameless rapidity, the ex-claimant generally managing to dispense with further medical attention.

Education. When there is general dissemination of knowledge of the fact that the giving of a pension or compensation for hysteria is the chief factor in the prolongation of the individual's neurosis, preventing his becoming a wage earner, then there will be less sympathy on the part of the public which has eventually to pay the bill. Juries will be less inclined to award large verdicts, payable by the individual, corporation, state or federal purse. Moreover, it is the worst possible thing for the claimant, not only preventing his recovery, but rarely does the compensation allotted equal the amount the individual could earn if well and employed.

Sir Purves Stewart states that "a pensioned hysteric is a social parasite," which is an epigrammatic way of expressing the truth.

Removal of the Cause. The receipt of a pension or compensation allotment is not only a powerful suggestion to the patient of his incapacity for work, but also favors the development of further hysteric symptoms. Any attempt at psychotherapy is usually futile against this sugestion. Stopping the compensation usually causes, first, an exacerbation of the symptoms, but later amelioration and finally recovery.

The following abstracts from my case reports illustrate some of the forms taken by a compensation neurosis:

No. 1136—Male, age 26, ex-soldier. Said he was gassed in July, 1918, and in an army hospital one and one-half months. He complained of a "nervous breakdown" of his arm, which had appeared eight months prior to the examination, or three years after his discharge from the army. When examined he presented a coarse, intermittent tremor of the right arm which ceased when his attention was diverted. He was employed as a city fireman, working steadily, and receiving $30.00 per month compensation.

Here it is obvious that a hysteric tremor, developing three years after the individual's discharge from the service, could hardly be classed as a war neurosis.

No. 1161. Male, age 28, farmer and ex-soldier. This patient had received a flesh wound in the buttock while in the army; the wound had healed and he was discharged without any disability. He worked for two years after his discharge from the army, discovering his disability during the activities of a body which functioned under the popular title of "clean-up squad."

When examined he complained of lameness and soreness of the hip on the side he had received the wound. "When I get up in the morning my hip is sore, then the pain travels all over my body." "I have weak, nervous, break-down spells, when I try to go out and do something." "Shooting off a gun will startle me if I am not expecting it." "I am bothered with my teeth." He walked with an exaggerated limp, favoring the left leg and presented stocking-like hypalgesia and hypesthesia to a point three inches above the left knee. There was no paralysis of motion, the musculature was firm and the extremity of the same size as its fellow.

This man's delayed hysteria was obviously not due to wound or war, altho the wound, formerly received, became a factor in the formation of his "compensation complex."

No. 306. Ex-soldier, seen in the spring of 1920, at which time he was having typical hysteric fits, varying in duration from a few minutes to four hours. He also presented the mental characteristics of the hysteric. He was seen again in June, 1923, over three years later, at which time he was suing the U. S. Government for his insurance on the strength of a Veterans Bureau rating of "total permanent disability." He still had his hysteric fits, but presented no other disability. Comment on this case would be superfluous.

No. 1016. Ex-service man, age 36; pre-war occupation, butcher. Had a sunstroke in 1918, and states that he had his back hurt while he was in the service, but had received no treatment for this injury. He further contracted flu while on his way home from France; recovered and was discharged without any disability.

His complaint was of pain in the back and head, pain and diminished power in his left leg. The leg disability developed while he was in a Public Health Service Hospital one year and nine months after his discharge from the service. When examined in June, 1922, he complained of fainting spells and convulsions which he stated had commenced in May, 1919, altho no mention of these attacks had been made when he was examined in October of the same year.

Examination revealed an exaggerated Romberg sign, a limping gait and absolute anesthesia of the left upper and lower extremities.

This man had worked three weeks in three years, and had spent thirteen months in various hospitals, having five different admissions. When examined in June, 1922, he was suffering from an acute exacerbation of symptoms as his compensation had just been reduced from $80.00 to $8.00 per month.

No. 343. A young lady of 19 summers received a "shock" on January 26, 1920, thru the crossing of electric light and telephone wires, causing total deafness of the left ear, loss of power on the left side and certain "spells." These attacks were described by the claimant as follows: "I just stiffen out like a board and get numb on the left side." The spells lasted from one to two and one-half hours, and in one attack, described by the mother, the left hand was cramped. The patient cried all during the attack, complained of her head and placed one hand over her heart.

The examination made in May, 1920, revealed no physical signs of injury nor symptom of organic disturbance. She would walk at times with a peculiar cramp-like limp; at other times when her attention was diverted she would walk almost naturally. At the first test her grip with the left hand was normal; on subsequent tests it was nil. Station, pupils, eyes, reflexes, coordination, musculature, etc., were all normal. Ear tests were unsatisfactory and contradictory. On one occasion with hearing of the good ear completely blocked off, she was asked if she could hear (examiner was standing behind patient) and she promptly replied "No."

No. 2513. Man, age 35, had been in a railroad accident in June, 1922. He had a couple of ribs fractured, besides sustaining numerous contusions. His claim was promptly settled for $1,500. With part of this amount the victim purchased a flivver and life was one glorious round of pleasure while the rest of the money lasted. Then, strongly aided by wifely suggestion, he became an ill man, not only physically but mentally; his alleged insanity being the excuse for reopening the case, his wife claiming that he had not been mentally responsible when he accepted the award and signed a release. An accommodating attorney reentered suit against the railroad for $50,000.

When examined eleven months after the accident he complained as follows: "My back aches. My head hurts. My arms get so that lots of times I have no use of them. My fingers go to sleep and tingle. I get dizzy and fainty-like. I have a pounding in here (indicating left chest) quite often. My hands are stiff and sore. My eyes ache and pain." He also had typical hysteric convulsions of twenty to twenty-five minutes duration.

When questioned he stated that he had nine or ten ribs broken and had been in the hospital for six weeks. (He had been in the hospital eight or nine days and had two ribs broken.) He claimed he did not know what hospital he was in, the date of the accident, where it happened, or what kind of a car he was in when it occurred. On being told that he knew perfectly well what hospital he had been in and to cut out his nonsense, he was able to recall the name of the hospital.

He walked into the office with a peculiar gait, pushing or dragging the left foot. On leaving, he walked naturally. Barely able to stand when the Romberg test was made, he managed to balance himself on one foot at a time while putting on his trousers. On the finger to nose test he always missed by a wide margin, altho he used his hands naturally while dressing. Without prolonging the description by further detail I will only add that he also presented hysteric sensory symptoms and an intermittent hysteric tremor.

Here we have a bona fide accident and injury, compensation award, recovery, relapse; a case presenting both hysteria and malingering.

CONCLUSIONS

Compensation neurosis is a definite and frequent clinical entity which may develop shortly after the initial accident, injury, wound or war experience, or may be delayed for a considerable time.

The neurosis may occur in association with an actual physical injury or may appear as an independent condition.

Three distinct factors contribute to the etiology of a compensation neurosis: first, the underlying neuropathic predisposition; second, the intermediate or pivotal element—the accident, injury, wound or war; third, suggestion as to compensatory possibilities.

It is more difficult to tell where hysteria ends and malingering begins than to differentiate between hysteria and an organic disability.

In an accident case, prompt settlement of the claim by the party liable constitutes the best treatment (preventive).

When an individual afflicted with compensation neurosis is receiving a pension because of such disability, the continuation of the pension is bad for both the individual and for society.

The Use of Arsphenamin and its Derivatives Administered by Rectum

A number of children with active manifestations of congenital syphilis were selected by Sidney Littman and J. G. Hutton, Cleveland (Journal A. M. A., March 15, 1924), for investigation. In all instances arsphenamin, alkalized in the usual manner, was given by enteroclysis following a cleansing enema. The dose was three times the usual intravenous amount of 0.01 gm. per kilogram of body weight, administered in 100 c. c. of distilled water. Practically complete retention of the solution was effected by the addition of 3 or 4 drops of tincture of opium. No reactions were noted. The reports show that the beneficial results on the lesions of manifest congenital syphilis were too feeble to be demonstrated clinically and to warrant the consideration of this method in the treatment of congenital syphilis.

THE STAGE OPERATION IN EXOPHTHALMIC GOITER *

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The mortality rate of operations upon patients for exophthalmic goiter twenty-five years ago was between 25 and 30 per cent. Today, in the hands of competent surgeons, it is not greater than 1 or 2 per cent. This great reduction in mortality has been brought about, first, by the recognition of the importance of early surgical treatment; second, by improvement in technic; third, by early diagnosis; fourth, improved ability in estimating the resistance of the patient; and, fifth, by the stage operation in serious cases.

Early surgical treatment. The great reduction in the mortality following operations upon patients with exophthalmic goiter is due to the recognition by the profession generally that its treatment by means other than surgical is merely a temporizing measure, which in the majority of instances either endangers the life of the patient or increases the risk of permanent injury being done before operation, such as permanent cardiac changes, permanent hypertension, or permanent nervous derangement. Formerly operation was looked upon as a procedure of last resort. Patients were often almost moribund before being referred to a surgeon, but now they come for operation much earlier in the course of the disease.

Improvement in technic is next in importance in reducing the mortality and morbidity in this disease. In this field Crile's work is preeminent. Formerly many patients with simple goiter died as a result of surgical precedure, while today severe cases withstand the delicate touch of the modern goiter surgeon with little shock.

Early diagnosis. Formerly patients were often seriously ill before a proper diagnosis was made. This was especially true in those cases where exophthalmus appeared late.

Resistance of patient. In estimating the severity of the disease and the resistance of the patient, there are many factors to be taken into consideration. First, the number of previous attacks; second, the severity of the attack thru which the patient is passing; third, the basal metabolic rate; and, fourth, other factors that may have a direct or indirect bearing upon the disease.

The number of previous attacks. Exophthalmic goiter should be recognized as a disease more or less chronic, beginning usually with an acute attack but sometimes insidiously. The acute primary attack when untreated may terminate fatally or, as is usually the case, passes over into a stage of remission which may vary from a few weeks to years, but during which the patient is often subject to minor and often unrecognized recurrences, resulting in more or less permanent injury. The majority of the patients have subsequent attacks. The resistance of the patient usually becomes lower with each attack, so that a smaller excess secretion of thyroxin, as measured by the basal metabolic rate, will produce greater manifestations as the number of attacks increases. Because of this gradual lowering of resistance, as well as permanent lesions that may have been produced, the prognosis becomes more grave with each attack and hence operative procedure must be planned with greater care.

The resistance of the patient, other things being equal, varies in inverse proportion to the rapidity of the onset and the severity of the symptoms. In those attacks which develop rapidly, especially when precipitated by shock or severe strain either from disease or rapid expenditure of energy, the resistance of the patient to operative procedure is lower than in those which come on more slowly. Patients having gastrointestinal crisis, an unstable heart or severe nervous or mental disturbance, require the utmost care. Patients will stand operative procedure better in the stage of retrogression than in either the stage of onset or the stage of maximum intensity. However, because of the danger of the production of permanent lesions, it is not safe for a patient seen early in the course of the disease to wait until the radical operation is safe. The stage of remission can be brought on by ligation of the superior poles, thus rendering operation safe.

The basal metabolic rate. In the primary attack the basal metabolic rate is a fairly accurate index of the patient's resistance, but in subsequent attacks, while it is of much value, it is of less importance. In the primary attack a rapidly rising basal metabolic rate or a basal metabolic rate that is in excess of what would be expected from a study of the clinical manifestations, indicates a rapid lowering of the resistance of the patient. When the course of the basal metabolic rate is running about parallel with that of the symptoms, the patient has reached the stage of maximum intensity. The resistance of the patient gradually diminishes thru this stage.

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* Read before the North Pacific Surgical Association, Seattle, Wash., Dec. 6, 1923.

In the stage of retrogression the basal metabolic rate drops more rapidly than do the symptoms and in this stage the patient's resistance improves. When the patient's basal metabolic rate is rising rapidly or when the basal metabolic rate is higher than the symptoms would indicate, operative procedures must be approached carefully. When the basal metabolic rate is dropping or if in the primary attack the basal metabolic rate is lower than the symptoms would indicate, the patient's resistance is usually fairly good. In subsequent attacks, however, this is not true because of either a lowered resistance or greater susceptibility to thyroxin due to previous attacks. A small excess secretion of thyroxin may precipitate a severe attack, hence the patient may be in a precarious condition and yet the basal metabolic rate be low because the excess secretion of thyroxin is low. The basal metabolic rate is of less value in determining the operative procedure in subsequent attacks then in the primary attack.

A general physical examination is always made upon every patient requiring operative procedure. Often other factors are found that have a direct bearing upon the resistance of the patient and the work that may be permitted.

Stage operation. The facts that have just been enumerated have had much to do with the reduction of the mortality and morbidity rate in goiter operations. There is, however, a considerable group of cases which are either severe from the very onset or because of delay on the part of the patient, or attempted so-called medical treatment or x-ray treatment, have become severe before coming to the surgeon. We have in the last two months seen three such cases. All three of them were advanced and all had been given medical treatment for a period of three years or more. In one there was a very definite history of the primary acute attack having been precipitated by iodine therapy. One had been recognized early as having exophthalmic goiter and had been sent to a hospital for medical treatment. It is in this group of cases that the stage operation is of greatest value to the patient. By means of our improved knowledge of the disease and more delicate method of estimating the patient's resistance, we are able to determine how extensive an operative procedure the patient can stand, so that even in the very severe cases, where the mortality rate was formerly very high, today it does not run more than three or four per cent.

We divide the stage operation into the following steps: first, preoperative preparation; second, ligation; third, postligation treatment preparatory to radical operation; fourth, radical operation; fifth, postoperative treatment. Each of these steps is of vital importance and the failure to carry out any one of the steps of the treatment may endanger the life of the patient.

Before any operative procedure is planned, the patient should be carefully examined by the surgeon who is going to operate. A true surgeon is a physician who treats the so-called surgical diseases. If a surgeon carefully studies his patients before operation and follows them after operation, he is better fitted as a diagnostician of surgical conditions; he is better able to estimate the patient's resistance and to determine the operative procedure most suitable to each particular individual patient under consideration and to direct the postoperative treatment than is one who does not follow the patient thru the entire course and treatment of the disease.

In general, the stage operation as followed in our clinic is as follows: In those cases in which the clinical symptoms indicate a lowered resistance or in which the basal metabolic rate is over 100 per cent, the patients are put in bed at absolute rest with an ice collar about the neck, sufficient morphine to allay the nervous manifestations, and digitalis for the heart for a few days, the period varying ordinarily from two days to a week. Those patients having an unstable heart or gastrointestinal manifestations, or severe nervous or mental disturbance are always included in this group.

After the period of rest, one superior pole is ligated under local anesthesia. As a preparation for the local anesthetic, we order a sedative sufficient to insure sleep the night before. Morphine, gr. 1-6, and scopolamine, gr. 1-150 or 1-100, are given hypodermically two hours before the operation and morphine, gr. 1-6, and atropine, gr. 1-150, one hour before the operation. The operative field is painted with 5 per cent picric acid in alcohol instead of iodine, because of the effect the iodine may have upon the goiter. For a local anesthetic, we use ½ of 1 per cent novocaine with no adrenalin.

Following the ligation, the patient is returned to bed, the ice collar applied about the neck, morphine is again given and digitalis if indicated. The basal metabolic rate rises at first and then drops. We usually do not do the second ligation for two weeks, because we have observed that the basal metabolic rate in the majority of cases continues to drop for about that time. The length of stay in bed depends upon the severity of the case. Many of these patients go home on the fifth or sixth day and remain until the time of the second ligation. In the more severe cases, however, the patients remain in the hospital. The second ligation is done under a local anesthetic with the same preparation as for the first.

Following the second ligation, there is usually a temporary rise in the basal metabolic rate and then a drop. It continues to drop for a period of six to eight weeks. At the end of that time it will again rise in many cases, so that it is our practice to follow it and, as soon as it has reached a level, the patient is returned to the hospital for operation. In the interval we advise the patient to refrain from all work and spend many hours in bed. A liberal diet is given and medication as indicated.

Upon reentering the hospital, we again insure rest the night before the operation. Morphine, gr. 1-6 or 1-4, and atropine, gr. 1-150, are administered one-half hour before the operation and the operation is done under a gas-oxygen-ether anesthetic. We make a low collar incision. The muscles are separated along the midline and spread with a Farr spring retractor.

The gland is lifted out of its bed with a tenaculum forceps. All but the posterior capsule and a thin layer of thyroid substance is removed. All procedures are carried thru as carefully as possible. The protection of the parathyroid bodies is essential for the prevention of postoperative tetany. We never pass the finger or an instrument posterior to the thyroid gland and never ligate the inferior thyroid arteries, as the parathyroids receive their blood supply from branches of these arteries. After all bleeding is checked, drains are brought out on each side back of the sternomastoid muscle thru the angle of the wound, the muscles are united in the midline and the wound closed with skin clips. An ice bag is applied to the neck, morphine is given to keep the patient quiet and digitalis if indicated. As soon as the patient has recovered from the effect of the operation and is able to swallow, a liberal diet is given.

The patient ordinarily leaves the hospital in about a week and then is advised to spend a considerable period of time building up before returning to work. If there has been any cardiac disturbance, special attention is given to the heart. The period of recuperation following the operation is of vital importance in lowering the morbidity and needs direct supervision.

Those patients who are said not to be cured by operation belong to one of three classes: first, insufficient operation; second, operation done so late that permanent lesions have already been produced; and, third, insufficient postoperative treatment. If the patient returns to work too soon, secondary pathologic conditions which would have otherwise cleared up may become permanent. It is just as much the duty of the surgeon to see that proper postoperative treatment is carried out as it is to see that the proper operation is done.

We have found in our clinic that there are a few cases, in which we do not get the desired improvement following ligation. In order to determine the cause of this, a study of the circulation has been made. This work was begun by Dr. H. S. Irvine, a former associate, and completed by Dr. Dudman. Thru the kindness of the pathologic department of the University of Oregon Medical School, we were able to obtain from postmortem examination a mass of tissue from the neck containing the thyroid, trachea and adjacent muscles. The arteries were injected and roentgenograms taken.

From this study we have observed several anomalous conditions: first, large anastomotic vessels between the superior and inferior thyroid arteries, so that in some instances the opaque material flows from the artery at the opposite pole from which it is injected (fig. 5); second, fairly large anastomotic vessels, connecting the superior thyroid poles at the isthmus, so that the opaque material when injected in one superior thyroid artery flows easily across and out of the superior thyroid artery of the opposite pole (figs. 3 and 4); third, in one instance we found an anastomotic branch extending from one superior thyroid artery to the other superior thyroid artery outside of the gland substance (fig. 6); fourth, anomalous branches of the superior thyroid artery, leaving the artery at some little distance from the superior pole and entering the thyroid gland some distance distal to the upper end of the superior pole, so that in ligating the superior pole the branch could be missed (fig. 5); fifth, anastomotic branches extending into the trachea or larynx. These are sometimes quite large. In one instance at the operating table one of these anastomotic branches

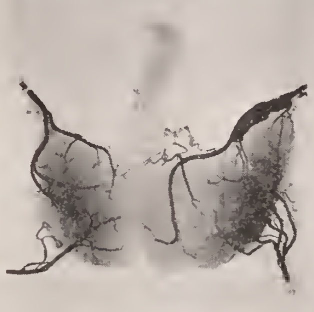

FIG. 1

Fig. 1. All four arteries injected. Normal distribution of vessels.

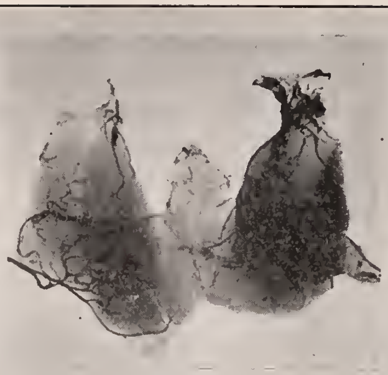

FIG. 2

Fig. 2. All four arteries injected. Anastomotic branches seen in median lobe.

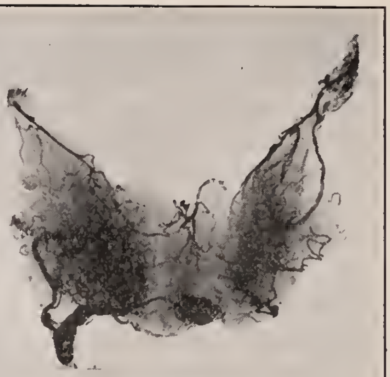

FIG 3

Fig. 3. All four arteries injected. Large anastomotic branches in the isthmus.

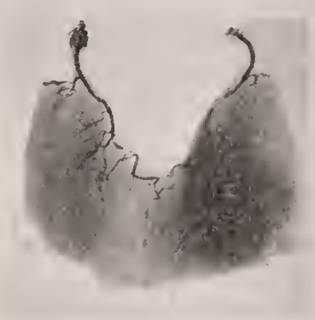

FIG 4

Fig. 4 Only one superior thyroid artery injected. Due to rich anastomosis the opaque material flowed readily from the other superior thyroid artery.

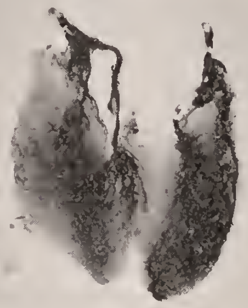

FIG. 5

Fig. 5. Injection of superior thyroid arteries. One lobe shows branch leaving the superior thyroid artery above the upper lobe and entering the isthmus. In the other lobe there is anastomosis between superior and inferior arteries so that the opaque material flowed from superior to inferior artery.

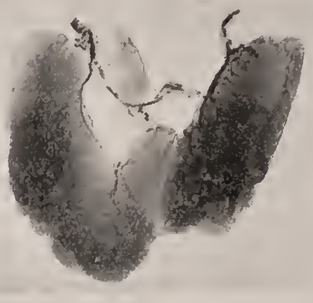

FIG. 6

Fig. 6. Shows anastomotic branch extending between superior thyroid arteries independent of thyroid gland.

was so large that, upon cutting it, blood spurted for a distance of about fifteen inches.

In those cases, in which satisfactory results have not been obtained from ligation, we have modified our postligation treatment. The patient is kept in bed, sedatives used freely, altho care must be exercised in the use of the habit-forming drugs. X-ray treatments are given to most of these patients. Following the x-ray treatment, the basal metabolic rate usually drops and the condition improves sufficiently for operation. Operation, however, should be done as soon as possible following the x-ray treatment, because the increase of blood vessels and connective tissue that are formed about the gland after x-ray therapy, renders the operation more difficult.

CONCLUSIONS

1. All patients with toxic goiter should be very carefully studied and treated by one who is willing to give the necessary time and attention required for each individual case.

2. All patients in a precarious condition should be treated by the stage operation method.

3. The stage operation, to be efficient, must consist of five stages, each of which must receive the careful attention of the surgeon; (a), preoperative preparations, (b) ligation, (c) postligation treatment, (d) the radical operation, and (e) the postoperative treatment.

Such careful consideration of all patients suffering from hyperthyroidism would reduce the mortality and morbidity as low as that of appendicitis.

Phagocytosis of Erythrocytes in Pernicious Anemia

In a group of typical cases of pernicious anemia, which they have studied during the last year and a half, Francis W. Peabody and G. O. Broun, Boston (Journal A. M. A., March 22, 1924), found process which is so extensive that it must account for a very considerable amount of blood destruction. This process is the phagocytosis of erythrocytes by endothelial cells. Whether the phagocytosis of red blood corpuscles is of sufficient degree to account for the blood destruction in pernicious anemia completely, it is not possible to state at present; but the process is certainly so marked that it merits more attention than has hitherto been paid to it by hematologists.

TREATMENT OF EXOPHTHALMIC GOITER WITH IODINE *

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This paper is presented, not with the idea of reviewing the entire medical and surgical procedures in the management of goiter, but with the purpose of bringing to your attention the recent but much discussed method of treating this type of case with iodine. How often, in the span of an average doctor's career, has he seen the medical profession face about and completely change front in regard to some of its pet theories and hobbies. It seems almost paradoxical that only so recently we were taught and believed that iodine was the one drug that had a specifically harmful influence on the course of an exophthalmic goiter, and today it is recognized as a specific in its beneficial effects.

Whenever a new treatment is introduced, the results obtained in the individual case depend upon the judgment used in the application of the method to the principles involved. In particular does the foregoing apply to the use of iodine in the treatment of exophthalmic goiter, for the reason that this is not the only type of toxic thyroid disease; also that the other type, namely hyperfunctioning or toxic adenoma of Plummer, is made worse by the treatment. So that, before proceeding on a course of treatment, it is of utmost importance to establish a definite diagnosis. In a relatively large percentage of cases this is fairly easy, but in a smaller number it may be quite or almost impossible.

These cases are rare and, with a clearer knowledge of the physiologic and clinical differences between exophthalmic goiter and hyperfunctioning adenomatous goiter, should become still more rare. As an illustration of the high degree of accuracy with which these differences may be recognized, Plummer states that "only in from one to three cases in each 1,000 thyroids resected, which show the histologic picture of diffuse hyperplasia, is the clinical diagnosis of exophthalmic goiter not made prior to operation."

There immediately arise in one's mind the questions, first, if iodine be beneficial in exophthalmic goiter and harmful in hyperfunctioning adenoma, what are the pathologic and physiologic differences in these two types of goiter, that account for these opposite reactions; second, what are the clinical criteria by which one can recognize the two types and so avoid the error of instituting the wrong treatment? In regard to the first, the histologic and physiologic known facts must be bridged with theory in order to satisfactorily answer the question. In answer to the second, the clinical syndromes of the two pictures are so different as in most instances to make them fairly easily recognized.

The known facts in regard to the normal physiology of the thyroid gland have been acquired largely from the study of cretins, from animal experimentation, from studies in basal metabolism, and from work done with thyroid extract and thyroxin. In this paper it is assumed that thyroxin is the normal physiologic product of the thyroid gland.

Having the normal product of the thyroid in pure chemical form has made it fairly easy to administer thyroxin in varying amounts over longer or shorter periods of time; to elevate the basal metabolic rate to various stages and maintain it there and follow the clinical course of the effects of this sustained metabolism, the clinical features of which exactly parallel those of hyperfunctioning adenoma. Reduced to simpler terms in each instance, the symptoms are identical with those of a sustained increase in basal metabolism, or to the long continued increase in the transformation of energy in the body.

On the other hand, the clinical features of exophthalmic goiter do not parallel those of a sustained increase in basal metabolism. So a theory has been drawn by Plummer that so nearly correlates the varying phases both histologically and clinically of exophthalmic goiter and hyperfunctioning adenoma, that no single phase either histologic or clinical may not be explained by its application. In brief, the theory is this: The symptoms of toxic adenoma are due to an increased output of normal thyroxin; those of exophthalmic goiter are due to "some intensive stimulation of unknown source, acting on the entire gland, driving it to the point of producing an active agent abnormal in quality as well as quantity, which in the tissues of the body cause all the phenomena of the disease." There is also reason to believe that all of the product elaborated by the thyroid gland is not abnormal in quality.

To simplify, some of the cells are elaborating a product abnormal in quality, while others are elaborating a product normal in quality but abnormal in quantity. In one instance a thyroxin molecule is being elaborated in excess of the normal requirements of the tissues; in the other an abnormal or incomplete thyroxin molecule is being elaborated

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* Read before Seattle Surgical Society, Seattle, Wash., Feb. 29, 1924.

which acts in such a manner as to cause the symptoms of exophthalmic goiter.

How is it possible, then, to correlate the histologic and clinical phases of these conditions with the aforementioned theory and with the statement that iodine acts in a beneficial way in the treatment of the one and in a harmful way in the treatment of the other? Histologically, exophthalmic goiter presents a picture of hypertrophy and hyperplasia, in which the acini have lost their power to store colloid and iodine. It is believed that the cells of the gland are being driven by a stimulus of such intensity that in the absence of an excess of iodine they are turning out a product abnormal in its nature. Excessive stimulation of any cell over a sufficiently long period will cause it to function abnormally, be it muscle, nerve or other.

In order to make a differential diagnosis between exophthalmic goiter and hyperfunctioning adenoma, one must bear in mind the constantly changing phases of exophthalmic goiter, and that the patient may present himself in any stage of the disease. Also, that one patient may exhibit predominant symptoms of one character and in another patient these symptoms may be quite or almost absent. In the absence of other differential criteria, one must be prepared to take advantage of the history of the case in order to arrive at a definite diagnosis. It is not within the scope of this paper to attempt a complete differentiation, but to point out the fundamental differences in principle involved, with which as a working basis, one should be able to analyze a given case and arrive at a diagnosis.

Exophthalmic goiter comes on in younger people with an average age of about thirty-five. Toxic adenoma appears at the average age of forty-five. In exophthalmic goiter the average time of appearance of symptoms following enlargement of thyroid is about three years; in adenoma about seventeen years.

Exophthalmic goiter runs an up and down course; begins slowly and sometimes rapidly with gradual increase in symptoms to crisis; then regresses toward normal, which it may or may not reach. Adenoma begins insidiously, runs a slow, but gradually increasing course to terminate in a phase of cardiac degeneration, in which frequently the cardiac symptoms dominate the picture. It does not relent or regress, there being no tendency to crisis or gastrointestinal crises. In exophthalmic goiter gastrointestinal crises are fairly frequent during crisis.

In exophthalmic goiter the nervous symptoms are of somewhat different type and more severe. Excitability, tremor, and emotional disturbances are more frequent and more pronounced. "Exophthalmus is present in 60 per cent of cases of exophthalmic goiter that are two years old, 30 per cent of cases three months old, and 80 per cent of cases three years old. It is never present in adenoma."

Thrills and bruits of superior thyroid vessels are present in a high percentage of exophthalmic goiter; practically never present in adenoma. Basal metabolism in exophthalmic goiter averages almost double that of adenoma. Metabolic rate of over plus 50 per cent is rare in adenoma but common in exophthalmic goiter. There are many other differential points.

The relatively excellent results in surgery of the thyroid gland today are due more to increased vigilence in the preoperative care and choice of time for operation than to the development of a brilliant surgical technic. As proof of the above statement, if proof need be offered, it would be difficult to conceive of any sudden improvement of surgical technic that would reduce the necessity for preliminary ligations in one year to 50 per cent of the number done in the preceding year, yet that is what has been accomplished by the routine administration of Lugol's solution to all exophthalmic goiter patients in the Mayo Clinic.

To quote literally from Pemberton, "More patients were operated on in the year 1923 than the preceding year, yet fewer operations were done in 1923 than 1922. The mortality was also reduced." During the year 1922, eighteen patients died in preoperative treatment of exophthalmic goiter. In 1923 only two cases died, and both of these within forty-eight hours of admission.

It would seem that, with the present advance in the preoperative treatment of exophthalmic goiter and having at our command a fairly reliable control of the postoperative crises, the indications for stage operations will become less and less frequent. Certainly combined with the adoption of local and gas anesthesia and the development of a rapid and non-traumatic surgical technic, will the indications for multiple operations become less frequent.

Haging had the good fortune to hear both Pemberton and Plummer describe the rapid improvement in many of these patients, in all of their symptoms, nervousness, pulse rate, together with a decline of basal metabolic rate, I am convinced of the value of the method. Dr. Plummer, in the clinic, described some of the most striking changes that took place in patients who were admitted in crisis. In from one to four or five days they would pass out of crisis into a restful stage. I have seen a number of patients, in whom less severe crises would be almost abruptly terminated by the use of rather large doses of Lugol's solution.

Postoperative crises are treated in the same manner. Operation does not remove all the diseased tissue. It is not to be expected that operation in itself will change the nature of the remaining tissue. The probabilities are that, when sufficient time has elapsed to establish clinical evidence, recurrences of exophthalmic goiter may be largely controlled by the judicious administration of iodine.

DIVERTICULITIS OF SIGMOID

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This being a condition not especially common and so often misdiagnosed, and having seen several such cases, I was stimulated to look up the subject. The term multiple diverticulitis is used to designate the presence of two or more saculations projecting from the lumen of the gut, and the associated secondary inflammatory changes.

Virchow, in 1853, described the condition as an isolated, circumscribed and adhesive peritonitis, but for many following years this pathologic process was overlooked. Bitorf, in 1909, described the condition as a circumscribed peritonitis and Windsheid spoke of it as an acute exudative inflammation of the colon. The entity of the disease was not fully established until Graser, in 1898, demonstrated fully the pathology. Excellent articles in recent years have been published by Burr, Fisher, Moynihan, Bruce, McGrath, Mayo, Carman, Griffin, Telling and Erdman.

Diverticula have been observed in every division of the digestive tube, from the mouth to the anus, but my remarks will be limited particularly to those occurring in the lower portion of the large bowel. Diverticula are spoken of as true and false. Congenital and true are synonymous, likewise acquired and false, but, whereas congenital diverticula are always true, acquired diverticula may be true or false. An example of the congenital or true diverticulum is that of the Meckel's type. Nearly all these diverticula are of the false type; that is to say, they are herniae of the mucosa, thru the muscularis, commonly at points where the latter is penetrated by vessels. The chief causes are weaknesses of the muscularis, with an increase of intraintestinal pressure such as occurs in stasis and gas formation.

Diverticula may vary from infinitesimal sizes to that of a large English walnut. They are usually round or oval, often sessile, occasionally pedunculated in shape. The opening into the bowel may be narrow, practically stenosed, or may be almost as wide as the diverticular cavity. Except those in the small intestine, the sacs usually contain fecal matter, and sometimes coproliths.

Histologically the sac wall is made up of the mucosa, submucosa, and serosa, the muscularis being slight or wanting. The mucosa may be slightly atrophied or even ulcerated, but the most constant pathologic process is the chronic proliferating, extramucosal inflammation, the peridiverticulitis, with round cell infiltration which results in mass formation which is well described by Wilson.

This secondary change, which is so common in the large bowel, is rarely ever met with in the small, due, no doubt, to the fact that in this section of the bowel they rarely have permanent fecal content. Their tendency to be filled with and to retain feces is the leading characteristic of the diverticula of the lower bowel, and from this fact all their secondary pathologic and clinical importance is derived.

Diverticula occur in the appendix, cecum, and all sections of the colon, with overwhelming frequency in the sigmoid flexure, also in the rectum and even in the anal margin. The most common area is the distal portion of the sigmoid, and when present it will often stop abruptly at the junction of the sigmoid and rectum. The principal reasons given for this are the strong musculature of the rectum and absence of appendices epiploicae.

As to the etiology of acquired diverticula, in contradistinction to the true or the congenital, and pulsion or traction type, in which all the coats of the intestine cover the sac, causes, as given by McGathin, are (1) obesity, (2) cachexia, absence of fat, (3) previous state of obesity and subsequent wasting, (4) normal structure of the large intestine, (5) physiologic role of sigmoid structure, (6) intraintestinal pressure, (7) relation of diverticula to points of entering of vessels thru intestinal wall, (8) variation in size of vessels, resulting from varying blood pressure (in chronic heart disease, etc.), (9) congenital predisposition with regard to the amount of laxity of the connective tissue surrounding the vessels, (10) muscular deficiency of the intestinal wall.

The view most widely held is that they are essentially pulsion diverticula, that is, the result of increased pressure within the bowel. This may be due to accumulation of feces or gas. The site of election in the lower sigmoid is alone a great factor in supporting this view, for here the fecal stagnation tends to be greatest. It is the chief delay point in the intestine, the stools becoming firm and less moist, the formation of gas being frequent and often considerable.

Constipation plays a role, but according to Telling only 21 per cent of his cases were so bothered. Sixty-eight of his cases were men, constipation being more common in women, but this might be accounted for by the manual labor and straining which is more common in men. Senility certainly favors this condition and it is plain that diverticula can be produced in the old experimentally, but not so in the young (Hausemann).

Wilson has differentiated diverticulitis from peridiverticulitis, the former being an acute inflammation of the mucosa within the diverticula, the latter being the chronic inflammation of the subserosa around the diverticula.

There is in many cases little evidence of diverticulitis, as the diverticula stand out freely from the gut wall and give no symptoms whatsoever and are only found at operations, x-ray examinations and postmortems. These diverticula are usually filled with fecal matter, of the consistency of the bowel, but sometimes it becomes inspissated (coproliths), which may act as an irritant.

Torsion of the diverticula sometimes occurs in the pendulous ones, leading to acute inflammation. Foreign bodies have been known to lodge in these sacs, causing an acute inflammation, simulating an acute attack of appendicitis, being located on the left side. There may be a chronic inflammatory condition, causing local symptoms only, leading to inflammation and adhesions and later undergoing ulceration or perforation. The proliferating inflammation may be so great as to cause a stenosis of the bowel or an abscess formation, perforating into the general peritoneal cavity or some adjacent viscera, the bladder being the most common.

REPORT OF CASE

Dec. 3, 1922. Patient, female, age 50, referred to me by Dr. Horswill, of Orofino, Ida. Family history negative. Has had two children, the youngest 25 years old. Was operated on fifteen years ago for an abscess in the left pelvis, and made an uneventful recovery. Is bothered at times with some indefinite gastric disturbance, which was only elicited upon close questioning.

Two weeks ago had what she thought to be influenza, temperature, chilly sensation and general malaise. About one week ago had a sharp pain in her left side, low down, referred to the groin. Had slight chills with temperature, which once reached 103°. Pain remains constant but at times seems greatly aggravated, especially if she moves about. No vomiting but was much nauseated. Never affected this way before nor does she recall that she has had any definite discomfort in her lower left belly since her operation fifteen years ago, but she has been bothered with considerable headache.

Heart and lungs were negative, abdomen was sensitive all down left side, left kidney freely palpable, enlarged and sensitive, spleen palpable upon deep breathing. Vaginal examination: Uterus rather low, large and more firm than normal and there is an indurated mass to the left side and high up in the pelvis. Temperature 101°, leucocyte count 22,500. Urinary examination negative except slight trace of albumin.

Patient was kept under observation for twelve days, the kidney being eliminated. X-ray examinations of ailmentary canal and especially large bowel showed nothing abnormal. In the meantime the leucocyte count continued up and temperature varied from 99° to 102°. Discomfort in belly less, mass in left pelvis increasing in size.

Dec. 16. I opened the abdomen, found the sigmoid plastered down in the pelvis. Releasing adhesions, pus was liberated (almost two ounces), but could not definitely locate the opening into the sigmoid which was very indurated. The small area was denuded, which was impossible to satisfactorily close over, the omentum being used to try and prevent perforation later. Rubber tissue drains were used in walling area off as best I could. Patient stood operation well. On the fourth or fifth day following operation a fecal fistula developed and she had a long, stormy convalescence. Later, an abscess formed well over to the left side, down almost to the groin, and still later a fistula developed into the bladder. She is now much improved, able to be about, the bladder fistula has healed and very little feces are coming thru the abdominal fistula. Health much better. Some time in the future I hope to be able to resect the colon.

In the less acute diverticulitis cases the possibility of carcinoma developing should be kept in mind, there being a constant source of irritation which is certainly a good predisposing condition for the development of cancer. It is claimed by pathologists that 25 per cent of the chronic indurated diverticulitis cases become malignant.

In making our diagnosis the age of the patient should be considered. The majority of chronic cases occur after forty, more common in men. The nutrition is usually good, alternately diarrhea with constipation of long standing, the latter condition considered by some as a frequent etiologic factor. Pain is present in a large percentage of cases. In the chronic type there is frequently a long history of attacks of crampy pain in the left lower quadrant and it is claimed that about 15 per cent give a history of abdominal pain of considerable severity. It must not be forgotten that symptoms are the result of secondary pathologic changes. They may vary from something very mild to acute peritonitis or intestinal obstruction, so the symptoms of pain may be variously manifested. The tendency to obesity with long history of abdominal pain in left lower quadrant and history of tumor formation and subsequent disappearance, feeling of general malaise with fever and sweats, is a very suggestive history.

Proctoscopic examinations are usually negative and rarely any blood from bowel is ever elicited. If there is abundance of fatty tissue, diverticulitis is more probable than cancer. Tumors of the diverticulum are usually sensitive, while cancer of the intestine is sensitive only under certain conditions. The x-ray is a valuable aid in diagnosis in many cases, but it should be considered in conjunction with the history and physical examination and laboratory findings. X-rays taken from thirty-six to forty-eight hours after a bismuth meal will often show the diverticula standing out clearly, as they will retain the bismuth long after the bowel has emptied, and, strange to say, these diverticula fill much better with bismuth given by mouth than by enema, even tho the colon be well dilated with the mixture. This is also true of the appendix.

In the peridiverticulitis cases, where inflammatory process is more or less active and there is mass formation, the x-ray can help to differentiate the condition from cancer. The x-ray findings in diverticulitis have a tendency to remain constant over long periods of time, while in malignancy the process is progressive and its contour will change. Cancer in general is an intraintestinal growth, the growth extending into the lumen, and definitely circumscribed. The tumor mass in diverticulitis is outside the intestinal wall and is not definitely circumscribed.

The chief points in differential diagnosis from carcinoma as given by Telling are as follows:

1. The absence of the "shadows of malignancy" from the general picture (Griffin).

2. Tendency to obesity, and maintenance of good nutrition generally.

3. Long history of attacks of abdominal pain in the left lower quadrant.

4. History of tumor formation with subsequent disappearance.

5. Absence of blood (visible to naked eye) in stools, over a prolonged period.

6. Presence of a vesical fistula, in which malignancy can be excluded by cystoscopy.

7. Negative sigmoidoscopy as regards malignant disease.

8. X-ray demonstration of diverticula.

9. Pyrexial attacks.

10. Examination of blood: the presence of neutrophilic leucocytosis, and the absence of the specific neuclear changes characteristic of cancer.

Certain other conditions have to be considered in arriving at a diagnosis. They are: (a) sigmoiditis, (b) hyperplastic tuberculosis, (c) actinomycosis, (d) syphillis, (e) pelvic conditions generally.

As to the treatment of this condition, the false or acquired diverticula, which are so often demonstrated by x-ray and in laparotomies, which are symptomless, empty easily and do not contain hardened feces, should be let alone, but those which have progressed to the second or third state, peridiverticulitis, abscess formation, etc., are purely surgical and what procedure to follow will have to be governed by the phase of the disease and condition of our patient.

In old and debilitated people it is better to carry them along, keeping the stools soft, mineral oil being of great aid in these cases. When we are fortunate enough to get these cases of peridiverticulitis without an abscess formation, we might treat them as we would an appendix by inverting the stump well thru the bowel wall, removing the associated fat, to insure good opposition of our inversion. In more advanced cases, abscess formation and fistula into the bladder or other viscera being diagnosed, the fistula should be closed and the organs separated by the use of the omentum and rubber tissue but not gutta percha.*

In the subacute and chronic forms, when there is a mass formation, it is advisable to resect, and what procedure to follow should be determined by the case, whether an immediate resection, and anastomosis or resort to the Mikulicz type of operation to be completed in two or three subsequent stages.

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*I am very prejudiced against the use of gutta percha tissue, for the reason that on a number of occasions I have removed pieces of this tissue from old wounds in which it had been used. When attempting to remove it broke off, leaving a piece unbeknown to the one doing the dressing, which caused trouble later. Twice in the past year I have removed this tissue from heads, in which it was used as drainage, in cases operated elsewhere. On two occasions, in cases of my own I had trouble with it, the first being a fractured skull, in which I had to put the patient to sleep and lift up the brain to secure the remaining part of my drain; the second, a cholecystectomy, in which it broke when attempting to remove and had some difficulty in getting it, but did not have to resort to anesthetic in this case. Rubber tissue and properly prepared oil silk surely is as good and much safer. Gutta percha deteriorates quickly and often in sterilizing goes to pieces.

A rubber tissue wick drain I am very fond of. It is easily made and has proven very satisfactory, similar in some respects to that of the soft rubber tissue drains of Mikulicz. It is made by rolling rubber tissue loosely together, making as many layers or rows as one sees fit, and sealing the distal edge of the tissue to the roll with the ordinary rubber glue used in patching rubber gloves, etc. There is a capillary attraction between the various layers of the rubber tissue as well as a soft cylinder for drainage.

SHAFT FRACTURES OF TIBIA AND FIBULA*

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The aim in the treatment of all fractures should be to obtain as good a normal function as is possible. The result of the treatment can be judged only by the function, and nothing can compensate for a poor functional result in a fractured bone. The first consideration, before attempting to adjust or reduce the fragments, is to know the condition that exists, the relation of the fractured fragments and the general pathology of the condition.

It is well to recall the anatomy of the part, and then endeavor to obtain a perfect, or as near so as possible, anatomic reposition of these fragments, as, generally speaking, good form is necessary for good function, and bad form causes bad function. Just as we know that to obtain good position of the fractured fragments is the best way to obtain good function, we also know and must realize at all times that such a procedure will not guarantee good function, and it is evident that, when we have regained satisfactory anatomic structure of the bone, our work in successful treatment is only fairly started. Neither does the treatment of a fracture terminate with strong union of the fractured fragments. The treatment of a fracture by the surgeon, and his responsibility also, terminates only with the restoration of the maximum degree of function compatible with the nature of the injury. The period of time necessary for the successful treatment of fractures necessarily varies and in some cases may be even a year or longer.

Broken legs are of common occurrence, and in an examination of statistics, we find that the tibia and fibula are involved in about ten per cent of all fractures; in our particular case, which has to do with the lumbering industry, about fifteen per cent of all fractures, the most common cause of these injuries is indirect violence, direct violence the next, and muscular violence is the cause of a small proportion. The greater number of these cases involve both tibia and fibula, but we sometimes find either of the bones fractured separately.

In a fracture of the tibia alone the site is mostly in the middle third of the bone, and there is nearly always some displacement of the fragments. In fractures of the fibula alone we find such occurring at almost any part of the bone, but seldom is there any displacement. It is generally a subperiosteal fracture. The tibia is much the larger bone of the leg and, as it enters into the formation of the knee and ankle joints, it is thus the weight-bearing bone of the leg. The fibula takes part in the formation of the ankle joint but not of the knee. It, therefore, takes but little if any part in the weight-bearing function of the leg.

Therefore, in dealing with fractures of the shafts of both bones of the leg, the consideration and treatment of the fractured tibia is much more urgent and important than that of the fibula. In fact, the condition of the fibula may be even disregarded, if we are able to obtain good form in the tibia, but, if we are able to regain good form in the fibula without hazard to the matter of remaining and retaining the form of the tibia, so much the better. Still we know from experience that it it is generally dangerous to perform any manipulations, if form of tibia is good and that of fibula is not. Thus, treatment of shaft fractures of tibia and fibula resolves itself essentially into the treatment of the fracture of the tibia. This conclusion is reached from observations in the treatment of sixty cases of such fractures.

There are three principal varieties of fractures of the tibia, namely, transverse, oblique and spiral. The first steps in the treatment of such conditions are to relieve pain and get the patient placed in bed as comfortable as possible. If there is a condition of shock, this must be first treated and further treatment eliminated until this has subsided. If there are no signs of shock, treatment may be started immediately. Radiographs are made in two planes. Thus we become informed definitely of the nature of the pathology of the form of the bones. the kind of fracture; in fact, we know what we are undertaking to treat.

If we recall for a moment our anatomy, we remember that the flexor muscles are stronger than the extensor. Thus a force is exerted on the fragments of the bones to pull them past each other. Also we know that the strong calf muscles and the interosseous membrane make it very difficult in oblque fractures of the tibia or fibula to reduce them, and also that it is a very difficult and trying matter to maintain in these fractures a reduction, even if such is at first obtained.

The object in the reduction of fractures of tibia and fibula is to obtain as good a form of the bones as possible, so as to restore the horizontal axis of rotation of the ankle joint, and the normal line of strain thru the knee joint, and also to have as little shortening of the leg as possible. Care must be exercised, also, to prevent any backward displacement of the fragments at the seat of the fracture. We are often able to obtain a good reduction by massaging the muscles of the leg for about ten minutes. The soft tissues surrounding the bones become relaxed, and the pain is very considerably relieved. Then manipulation of the fragments becomes a comparatively easy matter and, being aided by the use of the fluoroscope in this effort, we are often able to obtain good position of the fragments of the tibia, sometimes of the fibula also. If we get a good reduction of the tibia but not of the fibula, we disregard it unless gross pathology exists.

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* Read before Clallam County Medical Society, Port Angeles, Wash., June, 1923.

We have had more success in treating transverse and spiral fractures by the use of this simple method of reduction, and the results warrant that it be given a trial in every case. But, if we are not able to thus obtain our object in reducing the fragments to a satisfactory position, we immediately give an anesthetic and try further manipulation, being still guided in our work by the use of the fluoroscope.

If we are able to obtain a complete and satisfactory reduction we put the leg up in a Thomas splint and apply ten pounds or more weight for extension and fixation of the leg. The extension is applied either by a direct pull with weights, from adhesive applied to sides of leg and attached to a rope running over a pulley and fastened to the weights, or by fastening the adhesive or cord extending from it to the end of the Thomas splint, making it tight and increasing the extension by tightening the adhesive with a thumb screw arrangement.

In arranging the adhesive to the leg for traction we apply strips to both sides of the leg, running from immediately below the fracture to the sole of the foot, with holes cut in the plaster to fit over the ankles. This prevents pressure on the ankle and often prevents further trouble from ulceration and then often infection. I consider this very important, as I know of much annoyance having been caused by neglecting this precaution. Below the foot the adhesive is folded on itself, thus eliminating a sticky surface. This extends two or three inches and bandages or strong cord is now fastened to the free end of the adhesive for purposes of extension, as stated above. The adhesive should embrace nearly the whole of the leg below the fracture, a short strip about one-quarter of an inch being left free along the anterior border of the leg, following the anterior border of the tibia, and the same space on the posterior side of the leg. This will eliminate too much compression on the leg, and at the same time the adhesive will embrace the whole of the leg and strengthen it. The foot should be placed at right angle to the leg and so arranged that it is so held but can be loosened and moved at times. There are different methods of obtaining this result which will not need explanation here.

Frequently we are not able to obtain complete or satisfactory reduction, even when we have the patient under an anesthetic, and often we have to stop our manipulations as we are making no headway and further manipulations only tend to cause trauma to the surrounding soft parts. This is often the case in fractures where there is considerable displacement of the tibia, the lower fragment lying behind and to the outer side of the upper fragment, and thus causing considerable shortening of the leg.

We put the leg up in a Thomas splint. When this is done we apply traction, as before mentioned, but much more weight or its equivalent, if traction is applied by a pull on lower end of Thomas splint. Often we apply as much as thirty pounds. Frequent x-rays are taken and the condition of the fragments of the bones carefully watched. We apply pressure or apply gentle manipulations as would seem necessary or advisable. The amount of weight applied has two actions: first, in reducing the fragments and then holding them in fixation. When this weight is left on for a week or less, reduction is generally complete or such that it is satisfactory. If reduction is not able to be obtained under these conditions and the form of the fragments is such that a good result cannot follow, open operation will of course eventually have to be resorted to.

When the leg has been in Thomas splint for about a week or sometimes a little longer, such a time as it may take to cause it to become slightly firm and such that Thomas splint can be removed, if nothing untoward has happened, we remove the Thomas splint. Then we put the leg up in a splint we have devised, whereby the position of the knee may be changed, and now we are able to apply passive movement to the knee daily; also the leg and knee are massaged daily.

Fig. 1 shows the splint not in use. It consists of a base board 30 inches long, 11 inches wide and an inch thick. This lies on the bed and supports the other framework and leg. To this base board is attached by hinges another board 18 inches long and 11 inches wide. This may be put in whatever position desired and is held by movable braces which run

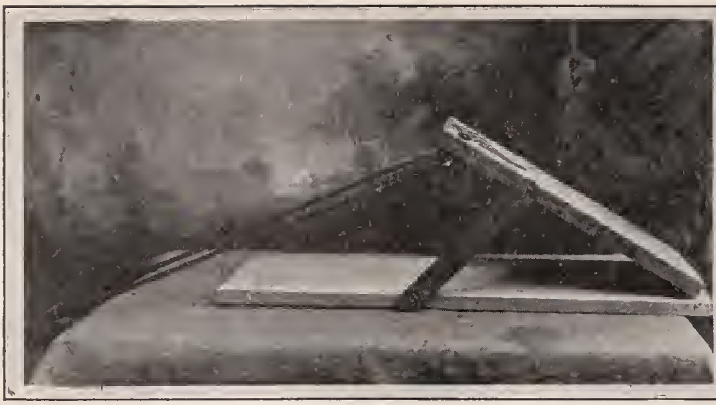

Fig. 1

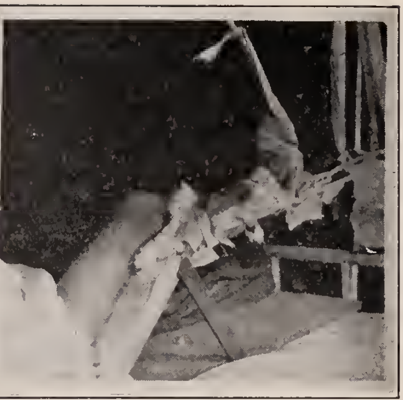

Fig. 2

Fig. 1. Shows splint not in use. Portion on which thigh rests is cut out where posterior surface of knee comes. This is faced with canvas that can be adjusted to accommodate different lengths of legs.

Fig. 2. Shows splint in use.

from the end remote from hinges to the base board. Upon this rests the leg above the knee, and it is generally operated at an angle of about forty-five degrees. The portion of this board about the knee is made circular in form and is so arranged with canvas for support of leg so it may be changed to accommodate different length of legs. From this board also, remote from hinges, is arranged an iron frame similar to end of Thomas splint, extending from the ring. The length of this is 28 inches. This works on swivels so it can be moved up and down. Thus, when in use, we move leg below the knee. Adhesive is applied to leg as before described for Thomas splint and extension and traction are made by fastening cords from ends of adhesive to end of iron frame. The force is also maintained by a thumb screw tightening arrangement. Fig. 2 shows the splint in operation.

We find by the application of this splint that we are able to maintain the normal form of the bones by a longitudinal force, pulling in the direction of the axis of the bones. Having all parts of the apparatus free, with no fixation to the bed, we have nothing to hinder the force of extension to the leg, and the apparatus is free to move with the leg at any time. The foot is maintained at an angle of forty-five degrees to the leg, with passive movements of the ankle carried on daily for a few minutes.

Frequent radiographs are taken and, when union has become well established, we put a cast on the leg and get the patient out of bed, and walking with crutches. When patient is able to get out of bed, there is always good movement of the knee and ankle. The cast is split so it can be removed, and at an early date after this we massage the leg daily, or apply some form of electrotherapy. This mode of treatment has in our hands given very satisfactory results.

Case 1 (fig. 3). N. P., a longshoreman, aged thirty years, had both bones of left leg fractured by being hit with a large piece of swinging timber. Patient did not suffer from shock and was in hospital ready for treatment forty minutes after accident had happened.

X-ray showed tibia fractured in middle third, and a small triangular piece of bone broken apart at seat of the fracture. Fibula was shown fractured in the upper third and the fragments overriding. The fragments of the tibia were overriding and the triangular piece displaced. Manipulation under an anesthetic improved the position of the fragments but did not completely rectify them.

The leg was then put up in a Thomas splint and traction applied, with the foot dorsoflexed, this being obtained by extension being applied with adhesive placed on the sole of the foot and running from the heel and attached to a weight above. At the end of the fifth day x-ray showed form of the tibia much improved. At the end of the tenth day the Thomas splint was removed and apparatus as above described put on. The knee received passive movements daily, and physiotherapy was applied to leg daily. On the twenty-sixth day x-ray showed position of bones in good form and callus formation well advanced.

Leg was then put in a cast which was cut and massage applied to leg daily, electrotherapy was also used, patient walking with crutches. He soon began to put some weight on the leg and at the end of the fourteenth week he was fully recovered and able to walk, having full use of knee and ankle. The functional result was over 95 per cent perfect.

Case 2 (fig. 4). J. T., a timber worker, aged thirty-five years, single, foreigner, had both bones of left leg fractured by being caught between two logs. There was considerable contusion of the soft parts and patient suffered from shock. He was put to bed when admitted to hospital and condition of shock treated.

Ten hours after accident his condition was such as to warrant active treatment of leg. X-ray showed both bones fractured, with overriding of tibia and displacement of fragments of fibula. Patient was given an anesthetic and by manipulation we were able to secure position of bones as shown in fig. 4. Leg was then put in Thomas splint and eighteen pounds of weight applied. This was left on for six days, at

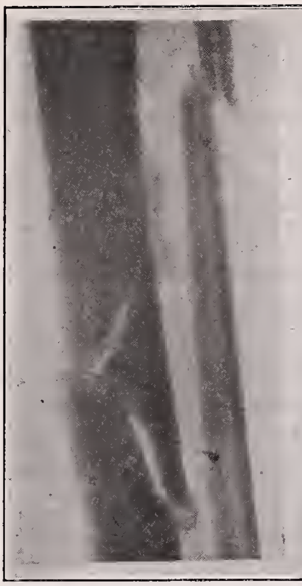

Fig. 3

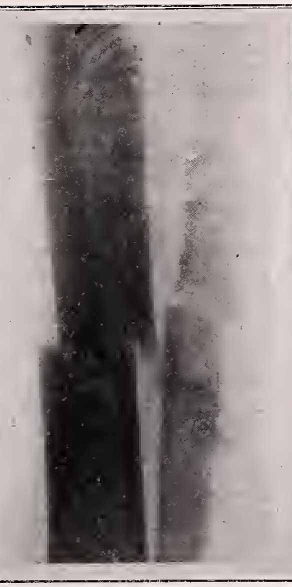

Fig. 4

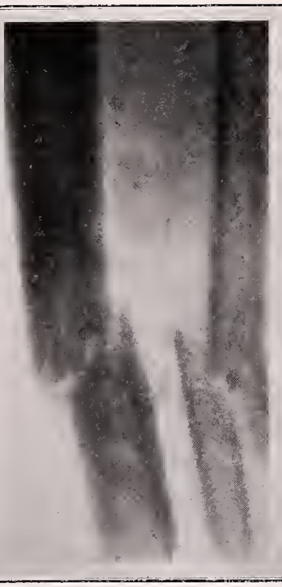

Fig. 5

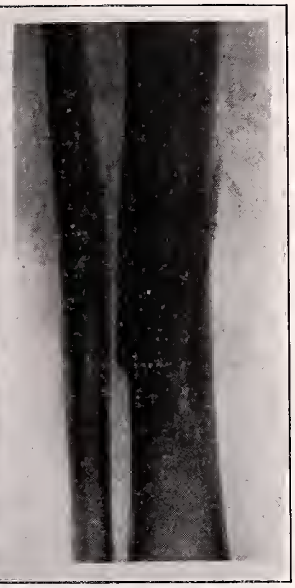

Fig. 6

Fig. 3 (Case 1). Shows fractured tibia and fibula at end of fourth week of treatment.

Fig. 4 (Case 2). Shows position of fractured bones obtained by manipulation.

Fig. 5 (Case 3). Shows position of fractured bones after manipulation and extension.

Fig. 6 (Case 4). Shows form of tibia at tenth week of treatment.

which time x-ray showed form of bone improved. During time the leg was in Thomas splint, pads were applied to help adjust fragments of bone.

At end of the sixth day we substituted our apparatus and started movement of knee and ankle, having foot dorsoflexed. Routine of massage and physiotherapy was carried on. At end of third week leg was put in cast and patient allowed out of bed. Cast was cut and leg massaged and electrotherapy applied daily. At end of eleventh week patient was recovered with function of leg nearly perfect.

Case 3 (fig. 5). A timber worker aged twenty-five years, single, American, had both bones of leg fractured by being thrown from a car load of logs. Patient did not suffer from shock and active treatment was started an hour after accident.

X-ray showed both bones of left leg fractured in middle third, with fragments of tibia overriding. By manipulation of bones with patient under an anesthetic and efforts aided by use of fluoroscope, position of bones was obtained as shown in fig. 5 Leg was then put in Thomas splint and ten pounds of weight applied. Leg was padded to assist in maintaining position of bones.

Thomas splint was removed at end of sixth day and our apparatus applied with treatment as outlined. Cast put on at the end of the twenty-fifth day. Final recovery of patient in fourteen weeks. Functional result perfect.

Case 4 (fig. 6). L. M., timber worker aged eighteen years, American, single, had right leg broken bv being caught in pulley. Patient suffered no shock and active treatment was started two hours after accident.

X-ray showed an oblique fracture of right tibia in middle third, with fragments overriding. No manipulation was tried, leg being put up in Thomas splint and twenty pounds weight applied. Thomas splint was removed at end of the twelfth day and our apparatus applied and usual treatment carried out. At the end of tenth week condition of bone was as shown in fig. 6 and at the end of the fifteenth week patient had recovered with a perfect or nearly perfect functional result.

SUMMARY

1. Exact knowledge of the existing condition is essential.

2. Frequent use of the fluoroscope and frequent radiographs are only means of knowing progress of case.

3. Manipulation of bones to be done with moderation.

4. Suspension and extension methods to be used mostly in obtaining and maintaining position of fragments.

5. Passive movements of knee and ankle commenced early.

6. Physiotherapy to be commenced early and carried on thruout the treatment.

Harrington Building.

Obstetric Brachial Paralysis (Erb's Palsy)

Five cases are cited by Samuel W. Boorstein, New York (Journal A. M. A., March 15, 1924). He concludes that obstetric brachial paralysis is due to stretching or tearing of the cervical roots of the brachial plexus. It is almost always associated with a difficult labor; in many instances, forceps having been used. The condition occurs in boys as frequently as in girls. The right side is more affected than the left. Affection of both arms is very infrequent. The upper arm type is due to injury of the suprascapular, and fifth and sixth cervical nerves. It is much more frequent than the lower arm type. The whole or lower arm type is due to injury of the entire plexus. Vertex presentation shows the larger percentage of occurrences of both types of cases. Improper management of the shoulder is responsible for many cases; hence they may be prevented by the obstetrician.

THE ADVANTAGES OF LOCAL ANESTHESIA OVER A GENERAL ANESTHETIC IN THE AGED. REPORT OF CASE OF SUPRAPUBIC PROSTATECTOMY DONE UNDER NOVOCAINE SACRAL NERVE BLOCK

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There are times in our practice when we are confronted with surgical work, where the hazard is so great that we hesitate to atempt any radical operation, and are more inclined to resort to palliative measures. This condition is often applicable to the aged. These cases do not bear general anesthetic well. Often after an operation under a general anesthetic your patient is shocked from the anesthetic as well as from the necessary surgical manipulation.

It is a very frequent occurrence to have an albumnuria and uremia a few days after an operation, coming on at a time when you are beginning to feel that your operation has been a success, and your patient is going to recover; then suddenly you notice an adverse change.

Of general anesthetics in the hands of an expert anesthetist, I believe gas-oxygen to be the safest, but in my opinion only a very few men are competent to administer it. For that reason, in selecting an anesthetic in these old debilitated cases, I believe we should not overlook the advantages of a local.

It is true that a local anesthetic is not free from dangers, so in making our selection, always keeping the welfare and best interests of our patient in mind, we should select an anesthetic that carries with it the least risk to the patient, and at the same time gives a good degree of anesthesia, making the necessary surgical work possible.

The case I am reporting is one in which every phase of the various anesthetics had to be considered, if any operation was to be attempted.

Mr. D. H, age seventy-seven, entered St. Peters Hospital Nov. 16, 1923. Family history negative, always has been a hard worker.

At forty years of age, had shortness of breath, followed by fainting spells. Difficulty in breathing became more severe as age advanced. For past fifteen years has had difficulty in passing urine. it being necessary to get up many times at night; this becoming more aggravated until the past four years, when he was unable to empty his bladder in natural way, and had incontinence; urine leaking day and night, making it necessary to wear a urinal, urine only leaking out when bladder became distended almost to rupturing point.

This condition, needless to say, caused him intense pain, which persisted at intervals both day and night. His bladder never did empty itself completely; merely enough urine would pass to relieve some of the bladder tension. In addition to urinary findings, there was a chronic endocarditis, with mitral regurgitation, heart much enlarged, and a general anasarca. Abdomen was full of fluid, legs, scrotum, prepuce edematous, patient was unable to lie down, and totally helpless.

Examination of prostate showed it much enlarged. Was unable to pass a soft catheter into bladder, and with his heart so bad and vitality so low, I did not at this time resort to the use of a metal catheter. Blood pressure 180 oystolic, 80 dyastolic. Urinalysis: sp. gravity 1010, albumin, pus cells.

Patient was treated in usual way, and dropsy gradually disappeared. He was not willing to be operated on and left hospital Dec. 2. On Dec. 7 he returned to hospital, not dropsical, but suffering the same as when he left, and stating that he was now willing to consider an operation.

X-ray showed bladder 6 in. long, extending to left and above umbilicus. After considerable difficulty I was able to get a metal catheter in bladder, and drew off 67 oz. of urine, it still showing albumin and pus cells. Bladder was catheterized and irrigated daily from then on, relieving patient of pain from distension, but in three days there was hematuria which persisted for a week with considerable distress. General conditions very bad, and heart conditions remaining the same.

Here was a case presenting himself to me for a prostatectomy, stating that a number of physicians had refused to consider operating on him long before he had reached his present condition. This is one of the cases that make us consider the pro's and con's of the various anesthetics.

After due deliberation I decided to operate on him under novocaine nerve block, as described by Labat.

We operated Dec. 20. One hour before going to the surgery he was given ¼ gr. morphine and 1/100 gr. scopolamine by hypodermic. Patient was drowsy, but conscious when going to surgery.

First, we did the caudal block, following the technic of Labat. With the patient lying on his abdomen, with hips elevated, we outlined the triangular depression bounded by the sacral cornua at junction of coccyx and sacrum, this being the base of the triangle and the promotory of the fourth sacral spine above marks the apex.

In the middle of this triangle is the point selected for entering the caudal canal. This point is marked by making a dermal wheal, using a small needle and one-half of one per cent novocaine with adrenalin. Thru this wheal a spinal puncture needle is thrust with bevel turned upward at an angle of 20 degrees to skin, penetrating the sacrococcygeal membrane which closes the lower extremity of the sacral canal. The needle now strikes the anterior wall of the canal. Withdraw needle slightly, swinging hub of needle downward toward gluteal cleft, advancing needle upward in sacral canal for about 6 cm. Withdraw stylet to see if any fluid passes; if none does, attach syringe and inject slowly 30 c.c. of 1 per cent solution of novocaine. Labat recommends a 2 per cent solution, but in this case we used the 1 per cent. With patient in the same position, the transsacral block is done. The landmarks for this are the posterior iliac spines and the sacral cornu on same side. The wheal for the second sacral nerve is located one centimeter in toward center of spine, and one centimeter below. The other wheal is made over sacral cornu. On the line between these wheals, divide in three equal parts by two other dermal wheals. These wheals mark the sites of the 2nd, 3rd, 4th and 5th sacral foramina. The first sacral foramen is found by making a wheal 2.5 cm. above the upper one in the same line; this marks the location of the sacral nerves you wish to block.

Use a 10 cm. needle for first foramen, which is deep, going in 2 cm.; use 8 cm. needle for second foramen, advancing 1.5 cm.; for 3rd, 4th and 5th nerves, a 5 cm. needle is used, advancing 1 cm. in third foramen, and 0.5 cm. for fourth nerve. The 5th nerve is injected just above the sacral cornu.

Labat recommends that 6 c.c. of a 1 per cent solution be used for the first foramen and reduce 1 c.c. for each of the others. This blocking takes care of the sacral nerves on one side, and the opposite side is done in same manner. The nerve blocking in back gives a complete anesthesia of rectum, anus, bladder and prostrate.

The patient is now turned on his back for a suprapubic prostatectomy, and it is necessary to block off the abdominal wall. I prefer Labat's method for this, because it keeps your anesthesia outside of your line of incision.

For the abdominal block we used 50 c.c. of a one-half of one per cent solution of novocaine. Two dermal wheals are made at outer border of rectus muscle about one and one half inches apart, spreading solution fanwise, using a 5 cm. needle. Another wheal is made over the pubis, and the needle follows closely behind symphysis, in contact with it, spreading the solution fanwise. For this we used 20 c.c. of a one per cent solution.

After waiting about ten minutes, we proceeded to operate. We did a suprapubic prostatectomy and inserted the drainage tube.

The patient was perfectly quiet at all times, occasionally would open his eyes, and never at any time gave an indication of pain. There was absolutely no shock, circulation was good, color was normal, and there was a complete relaxation of sphincter ani muscle. No other anesthetic was necessary, and none was given.

When we had finished the operation, he was asked how he felt, and he said he was thirsty. He was given a drink of water while on the table, then returned to his bed. He continued with his usual diet, and didn't have to miss any meals.

He stated that he had no recollection of being operated on. This, no doubt, was due to the scopolamine he had before going in the surgery. His pulse was good after operation, going to 120 per minute twice during first three days, and there was no nausea. He made an uneventful recovery, wound healing, and the urine passing in a natural manner.

The heart condition is still poor, however, but when I last saw him, he had gained twenty-five pounds, and his general condition is much improved. He says he feels better than he has for twenty years, and now walks without a cane.

With the novocaine sacral nerve block, there is an anesthesia that lasts from four to six hours after the operation. This feature, combined with no after effects following an operation as you so often see with a general anesthetic, appeals to me as a great advantage of the local over the general anesthetic in operative work on the aged.

In conclusion, I wish to say that here is a case in my opinion that could not have been operated on and survive, had he been subjected to the shock of a general anesthetic. Life to him, previous to this operation, was one of continuous suffering, and the choice between life or death to him was of small concern.

I think possibly we are a little too conservative in some of these old operative cases. When I first broached the subject to him, he was so decided in his convictions that he would not be operated on that I thought I was perfectly safe, but when he returned later to the hospital and stated he had come back for an operation, he had called the turn, so I either had to operate or back down entirely, and we operated on him with novocaine as our anesthetic, with above mentioned results.

PREVENTION OF POSTOPERATIVE HERNIA FOLLOWING LAPAROTOMY

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CHICAGO, ILL.

Postoperative, cicatricial or scar hernia occurs much less frequently than a few years ago. The factors that prevent the development of this hernia are rigid asepsis, the use of absorbable suture material, the selection of an incision that preserves the nerves and blood vessels, the careful approximation of each layer of the abdominal wall in closing the wound, and the overlapping of fascial flaps whenever possible.

The motor nerves that supply the lateral abdominal wall are branches of the fifth and sixth lower intercostal nerves, which run nearly transversely forward after leaving the intercostal spaces, and lie between the transversalis and internal oblique muscles. After giving off branches to these muscles, as well as to the external oblique, the nerves finally perforate the posterior sheath of the rectus muscle and terminate in the muscle. For this reason abdominal incisions should be made as near the linea alba as possible, but when it is necessary to enter the abdomen thru the lateral abdominal wall, the incision should run parallel to the motor nerves in order to avoid muscular paralysis, which will occur if these nerves are severed. Division of the nerves not only favors the occurrence of hernia, but also a lateral bulging of the abdominal wall, for which there is no operative relief.

A muscle-splitting incision should be used, when possible. In long incisions thru the external and internal oblique and transversalis muscles, whose fibres run at different angles, it is impossible to avoid cutting some of the fibres, and the incision should be planned so as to sacrifice the minimum amount of muscle, and to preserve the motor nerves. Whenever possible, it should be made thru the rectus muscle, rather than in the linea alba or linea semilunaris. Tinker has shown that the muscle-splitting or the rectus retraction incisions give the lowest percentage of hernias. Assmy found, from experimental studies, that muscle atrophy always occurs when the motor nerve supply is severed. Rouffart collected from the literature 1,506 cases, in which the transverse abdominal incision was used in the lower abdomen. Hernia developed in only 0.33 per cent of the cases.

It must be remembered that two short incisions heal quicker and more firmly than one long incision, and strong retraction is always to be avoided. The fascia is the strongest structure in the abdominal wall, and it is very essential to close it properly. The fascia is frequently under tension and unites more slowly than muscle tissue; for this reason, a simple approximation of the edges is not sufficient, but it is necessary to overlap each layer separately. When closure under tension is unavoidable, the patient's shoulders should be kept in a semi-reclining position and the knees elevated on pillows for a week after operation. Because fascia is always slow in uniting, the patient should be kept in bed at least three weeks, if the closure of the wound has been difficult.

The deep epigastric artery is the most important one to be encountered and should be preserved whenever possible on account of its branches to the muscles of the lower abdomen. All hemorrhage should be carefully checked before closing the wound, as hematomas are liable to form and cause postoperative hernia.

The importance of using absorbable suture material in all abdominal wound closures cannot be overemphasized. Tension or stay-sutures are of service to prevent strain on the fascia sutures. A gain in weight after operation, especially in obese subjects, increases the intraabdominal tension and weakens the abdominal wall. The use of an elastic belt after operations checks the tendency to rapid accumulation of fat.

PREVENTING SWIMMING POOL INFECTIONS *

C. Ulysses Moore, M.D., M.S. in Ped.
PORTLAND, ORE.

Sanitation is one of the greatest contributions of western civilization. John Wesley's remark, "Cleanliness is next to Godliness," is often considered a biblical injunction. When such nations as Egypt, Greece and Rome were at the height of their glory, their people gloried in their baths. England and America today are noted for their bathing proclivities. Yet the first President of the United States to have a bathtub installed in the White House was Millard Fillmore in 1850. About thirty years ago the swimming pool movement began, the first ones being in private clubs. Today it is almost axiomatic that every child should learn to swim, and the up-to-date schoolhouse has a gymnasium and a tank.

Abt[1] gives the value of swimming exercises in the following terms:

1. It allows a maximum amount of exercise and a minimum strain on the heart because the body is in a *horizontal* position.

2. Swimming on the back is a good corrective exercise for round shoulders and hollow chests.

3. The leg exercises assist in overcoming constipation.

4. All the large muscle groups are brought into play as in no other form of exercise.

All tanks must bear the opprobrium of the worst tank in a community. Every now and then the patrons of a certain tank on a certain day develop a pharyngitis which compels an absence from school or from work for a time. Often, too, some individual does not get off so easily, but has a complication, such as septic sore throat, otitis media, or a serious sinusitis, as shown by Dr. Ralph Fenton in a very excellent paper on this subject[2].

My attention was forcibly focused upon the situation in our own city thru an experience with my ten-year-old son. Last September, after a summer spent largely in the open and with apparently excellent resistance, he started taking swimming lessons three times a week in one of our best controlled tanks. After the fifth lesson he developed a pharyngitis sufficient to keep him out of school two days. It was thought that perhaps the infection was an accident. Three weeks later he started taking lessons again. After the third lesson a more severe infection occurred. Those in charge thought that perhaps it was due to draughtiness of the pool room. This was corrected and he was allowed to wear a woolen bathing suit. To eliminate the possibility of trauma as a causative factor, no diving or underwater work was permitted. Yet the third attempt was more fatal than the former ones. A septic sore throat developed with a temperature reaching 105 degrees to 105.6 degrees for four days. Gradually strength returned, and after two weeks school was resumed. But the boy who entered school then was a weakling, compared with his own condition two months before.

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* Read before the North Pacific Pediatric Society, Portland, Ore., Jan. 19, 1924.

On questioning parents, whose children were known to be patronizing different swimming pools, it was learned that our experience was not unique or rare, but common. The pool being the only common factor in these cases, it must in some way be the cause. Pool managers themselves have asked why so many children seem to "catch cold" from the tank. Investigation of one particular tank showed that the engineer or his assistant had become careless, the filter had become filthy and a bacterial count made at that time showed over a half million microorganisms per cubic centimeter of water. Needless to say this was corrected at once, but untold damage must already have been done.

A bacterial study of the tanks in our city has since been made, and the findings on a certain day are given in the following table:

CITY HEALTH BUREAU'S REPORT ON PORTLAND POOLS FOR JANUARY 10, 1924*

No.	Name	Capacity of Tank	Frequency of Water Change	Bacteria Per C. C.	Sample Taken
		Gallons	Days		P. M.
1	Bnai Brith	64,000	1	3,660	2:30
2	Buckman School	65,000	1	190	4:20
3	Couch School	48,000	1	96	3:00
4	Elks Club	55,000	14	5,400	3:45
5	K. of C.................	56,000	21	1,920	1:55
6	Multnomah A. A. Club	120,000	3	6	3:20
7	Portland Nat.....	170,000	3	22,140	1:40
8	Portland Social Turnverein	48,000	7	380	2:10
9	Y. M. C. A..........	54,000	21	300	12:30
10	Y. W. C. A..........	24,000	7	44	12:15
11	Shattuck School (Jan. 7, 1924)....	39,500	1	110,000	

Some of the low count tanks have at other times had very high counts and vice versa. Truly eternal vigilance is the proper price of pool purity. It is noticeable that many of the tanks have counts below 1,000 bacteria per cubic centimeter, the safe and satisfactory standard for a clean tank.

Pool water is essentially drinking water, therefore a food. Consultation with the head of the sanitary division of our city government revealed the fact that, whereas every other public eating and drinking place in the city is licensed, the "drinking pools" go free and unhampered.

It is true that at more or less regular intervals bacterial counts are made and perhaps the water is tested for free chlorine. But the results of these tests are not made public as are the bacterial counts of our dairies. We know the standing of the *milk* that our children drink, but we know nothing about the standing of the swimming pool water. If the sanitary inspector knows it, he is powerless under our present laws.

One is not surprised, therefore, to have a sanitary inspector say that the way he keeps his children from getting swimming pool infections is to "keep them away from the pools." This reminds me of Dr. Rebec's story about having his pockets picked in a certain foreign city. When he complained a second time to the chief of police, he was taken behind the scenes and shown how the chief kept his own pockets from being picked. He kept them sewed up tight.

Must we close our swimming pools, or are there methods by which the benefits of the pool may be obtained and the dangers be eliminated? Our city has one of the purest drinking waters in the world and one of the cheapest fuels for heating it. If this water were furnished free to the pools as it is to the drinking fountains on the streets, one way to remove this cause of disease would be to have sufficient fresh warm water flowing into the pools at all times. But the water is not free and heating after all is expensive.

There are four standard methods of disinfecting pool water: (1) Solution of copper salts, (2) ultraviolet light, (3) ozone, (4) chlorine in liquid form or as calcium hypochlorite.

Copper salts are fine for algae but have certain disadvantages for human beings because of their high toxicity. Sterilization by ultraviolet light requires a perfectly clear water delivered to the light in a very thin film. The water becomes sterile but contains no germicide. Ozone properly used with a specially installed plant gives excellent results, according to Mannheimer[3] who has studied it thoroughly. Chlorine is a harmless and efficient germicide and may be used in any type of pool. Liquid chlorine is best, but calcium hypochlorite is cheap and easily handled. The commercial variety contains approximately 30 per cent of available chlorine.

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* All pools were in use when samples were taken, except Nos. 1, 5 and 10. Samples were from the deep end of the pool. No colon found.

Sufficient chlorine must be added to combine with whatever organic matter the water contains and leave enough free chlorine for the destruction of microorganisms. The free chlorine content should never be below 0.2 p. p. m. or above 0.5 p. p. m. Testing is simply conducted by color comparisons, using a solution of 0.1 per cent orthotolidin in 10 per cent HCl and should be done every hour while the pool is in use, until the amount of chlorine or hypochlorite per number of bathers is definitely ascertained.

The amount of calcium hypochlorite required for a 100,000 gallon pool daily is about two and one-half pounds. If the pool does not have a modern filtration and chlorination plant, then the hypochlorite bleach may be added to the pool itself. The method of Magee[4] is simple and practical. Measure into a gauze bag the exact amount required, weight the bag and drag it thru the water in a maner calculated to give the greatest distribution.

A. M. Crane[5] summarizes the basic principles for pools and swimming as follows:

1. Maintain the water in the pool pure and clear, employing both refiltration and chemical disinfection.
2. Have the pool well lighted; natural light by day, sunlight if possible.
3. Keep an attendant always on duty when the pool is in use. Prohibit admission at other times; allow no one to enter the pool alone.
4. Maintain a strict supervision of the bathers, medical examination if practicable, preventing persons with communicable diseases, such as purulent conjunctivitis, sinus trouble, vaginitis, impetigo, ringworm, otitis media, and infected tonsils from entering the pool.
5. Enforce the scrubbing of each bather with the use of soap before entering the pool.
6. Prohibit all clothing (boys), or provide sterilized clothing.
7. Surround the pool with an overflow trough, and prevent pollution of any kind in or about the pool.
8. Prevent visitors carrying dirt and disease germs on their footwear into the pool room.
9. Do not have any obstruction in the pool, along the edge of the pool, or adjacent to it.
10. Do not *swallow* any pool water taken into the mouth.

The Secretary of the Oregon State Board of Health[6] has studied the swimming pool situation more thoroly, perhaps, than anyone else on the Pacific Coast. He, and doubtless all other health officers, stand ready to aid in purifying the swimming pools whenever the public is sufficiently enlightened to permit it. Is it not up to the doctors specially interested in children to start the movement?

When the public learns that its swimming pools are sanitary, patronage increases, as shown by the experience of Boise, Ida. A letter just received from Dr. F. W. Almond, Health Commissioner for Idaho, says: "Prior to three years ago the pools were operated without any sanitary regulations, except possibly a sign requesting the person to take a shower before entering the pool, which request was often disregarded. Following a campaign to correct faulty conditions, a number of the pools have installed chlorination and filtration systems and a ratio has been worked out for each pool, whereby the number of gallons filtered and chlorinated every hour varies with the number of persons using the pool. Spitting in the pool is absolutely prohibited. The latest bacterial tests run on these pools have shown a count of less than 1,000 per c.c. Altho the number of persons using the pools has increased considerably since the sanitary measures were inaugurated, we have had no cases of contagious or infectious diseases traceable to these pools in the last two years."

The object of this paper is not to present anything new, but to invite the attention to a condition in our midst that constitutes an offense against sanitary laws and that demands correction. From this study of the local situation the following recommendations are made:

1. That swimming pool operators be licensed as are other food handlers.
2. That monthly reports of bacterial counts be published as is done with dairies.
3. That water be furnished to pools at a very low rate.

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ARTIFICIAL PNEUMOTHORAX *

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The purpose of this paper is not to enter into an extended discussion of the subject of artificial pneumothorax; it is rather to touch lightly on its salient features, to refresh the mind of the general practitioner with some of the details of its technic, and to define in a practcal way the indications for its use.

I have been lead to choose this subject mainly for the reason that I have found in the profession at large an apparent lack of interest as well as information regarding it. It would seem that this is an apt illustration of the penalty we pay for overspecialization. The general practitioner, while thoroly competent to administer artificial pneumothorax, shirks the responsibility and refers the patient in the majority of cases to some far distant specialist.

I shall not burden you with the history of the procedure other than to call attention to the names of Carson of Liverpool who as early as 1821 suggested its trial in pulmonary tuberculosis; Forlanini who was probably the first strictly modern user of the method; our own J. B. Murphy and a host of others.

For the last ten years it has been recognized as an accepted procedure in certain cases of pulmonary tuberculosis. The discovery of the fact that filtered air carried no draw backs and for practical purposes was equally as valuable as nitrogen gas has simplified very greatly the technic.

The aim in inducing artificial pneumothorax may be defined as the introducing into the pleural cavity of a sterile harmless gas under such pressures as to partially or wholly collapse the lung which it is designed to treat. The motive is not only to place the lung at rest but to immobilize its root and cause compression to a point sufficient to accomplish retraction of its elastic tissues; further, by direct mechanical action to effect emptying and drainage of the pus and cheesy detritus of cavities, if any, together with inflammatory exudates in the alveoli and bronchioles.

The lymph chanels of the collapsed lung are compressed. The lymph stream is unable to carry away bacilli from the lesion and the process is localized to the effected areas.

The technic of the induction of pneumothorax is simple but not devoid of danger. The object is to inject air *into the pleural cavity* and not anywhere else.

APPARATUS

Various forms of apparatus have been invented but they usually consist of two graduated bottles connected by tubing equipped with turn cocks, one containing the filtered air to be injected and the other some fluid so arranged that on raising the bottle containing the fluid it is caused to gravitate into the air container, displacing the air from the bottle into the pleural cavity at such pressures as may be determined by the height to which the fluid holding bottle is raised. Attached to the air bottle, in series with it we might say, is the manometer, very fitly termed the soul of the apparatus. A proper manometer response is an essential preliminary to introduction of air which is conveyed into the pleural cavity thru anyone of the various types of pneumothorax needles, of which either the Saugman or Floyd Robinson are good examples. It is important that the lumen of the water manometer should be as nearly as possible that of the needle.

The operative technic is, as I have said, simple but should be painstaking in all details. At Galen we plan to enter the pleural cavity with as much respect and consideration as we would the peritoneal. If the injection is to be an initial one, a small sedative dose of morphia is given hypodermically about one-half hour before hand. The patient is always placed in a recumbent position either on an operating table or in his bed. The points of selection are the intercostal spaces in the axillary line. This for the reason that they are wider in this situation, adhesions are less in evidence, and there is an absence of thick muscle such as the pectoralis group in front or the latissimus dorsi behind.

The usual iodine preparation of the skin is made and the operative field protected with sterile towels covered in turn by a laparotomy sheet. A local anesthesia is induced with 1 per cent novocain solution. Care is taken to anesthetize layer by layer the structures from the skin down to the parietal pleura. The skin is punctured with a tenatome and the pneumothorax needle, to which the tube leading to the manometer has been attached, carefully introduced.

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* Read before the Forty-fifth Annual Meeting of Montana State Medical Association, Butte, Mont., July 11-12, 1923.

Entrance into the pleural cavity can usually be readily detected by the practiced operator. Resistance encountered may be likened very much to that met with in doing an ordinary spinal puncture.

The obturator is now withdrawn and the connection to the manometer opened. If the needle is in the pleural cavity, an immediate oscillation in the manometer is observed. There is at once seen a negative pressure of from 5 to 10 cm. and distinct respiratory oscillations higher on the side of the manometer which is conected with the needle than on the side communicating with the outer air. Having established by means of the manometer oscillations the fact that the lumen of the needle is in the pleural cavity, the injection of the air is proceeded with, slowness being used in all cases, even those of old refills.

Following the withdrawal of the needle the punctured wound is sealed aseptically and a light strap applied to the chest wall. The patient is ordered to retain the recumbent position for the remainder of the day.

The dangers of artificial pneumothorax can easily be guarded against, if the operator *resolutely refrains from forcing in air in the absence of proper manometer response.* Air embolism and hemorrhage from accidental puncture of pulmonary vessels would seem to be in the majority of cases preventable occurrences and due, if not to faulty technic, at least to errors of judgment.

True pleural shock, on the other hand, may occur without warning and occasionally be of fatal severity. Its etiology is obscure. A case has been reported occurring from the simple injection of novocain into the pleura. Luckily it is rare. We have not in a series of several hundred operations seen a case at Galen.

DIFFICULTIES AND DRAWBACKS

A large portion of failures to obtain a proper manometer response lies in the presence of pleural adhesions. They are aptly said to be the rock, on which pneumothorax therapy is frequently wrecked.

Should the manometer oscillation occur only to a very limited degree, the probabilities are that the needle has penetrated a pocket. Under these circumstances we have found it always better to withdraw the needle completely and make the attempt at another intercostal space.

Greatly thickened pleura is often an embarrassment and we have found no arbitrary rule to follow for the distance that the needle must penetrate to reach the free pleural cavity. Frequently a partial withdrawal of the needle gives a prompt manometer response, due to the fact that it had entered too far and the lumen had been occluded by pulmonary tissue.

As to the amount of air introduced at a sitting, it may be said that custom varies with different operators but the trend is to the smaller amount. We seldom if ever use more than 500 c.c. The rate of absorption of air varies in different cases. Where successful collapse has been procured, we have found a monthly refill of an average of 500 c.c. sufficient to maintain the necessary positive pressure.

Fluid is a great "bug bear" in pneumothorax. It occurs in a large percentage of cases, where the treatment is prolonged over a period of months. It is usually serious in character. If a mixed infection occurs, you have on your hands a pyopneumothorax and your patient is indeed in an unfortunate situation.

I am inclined to think that painstaking care in the technic of the operation is the best prophylaxis. Serous fluid uncontaminated need not be regarded as of great moment. Should it assume large proportions, it is best handled by its careful withdrawal and replacement by air. This practical point, however, must not be lost sight of. Should 400 c.c. of fluid be withdrawn not over 200 c.c. of air should replace it.

If the patient is lucky enough to secure an arrest of his tuberculous activity, the effusion will take care of itself. Above all things, even in the presence of pus, the attendant should not be tempted into an open operation.

INDICATIONS FOR USE

I take it that the general practitioner is interested mostly in knowing what proportion of his cases of pulmonary tuberculosis are adapted to treatment by artificial pneumothorax. Figures vary, but I think that in giving those of 7 per cent I would be erring on the side of liberality.

The types that make up this 7 per cent, I would define as follows:

1. From the general practitioner's standpoint, those early or moderately advanced cases that suffer from active pulmonary hemorrhage. It is very true that the textbooks blandly assure us that pulmonary

hemorrhage per see is rarely fatal, but I have had assurance of the same thing in ruptured tubal pregnancies. It is sufficient to say that in massive pulmonary hemorrhage we have a dangerous, and for the patient and relatives a terrifying, occurrence and that our medical armamentarium has little to offer other than the stereotyped use of morphia, thromboplastin, ice bags, ergot, etc.

On the other hand, a promptly used artificial pneumothorax, not hesitating at high pressures and large quantities, has been in our hands an apparent life-saving measure on several occasions.

I have heard the argument raised that it is sometimes difficult to accurately determine from which side the hemorrhage is occurring. I think this objection is more or less academic. In the majority of cases the practitioner will have some prior knowledge of his patient and the location of his lesions; even should this information be lacking, careful auscultation will usually furnish the required information.

2. Artificial pneumothorax is indicated in cases of acute types, characterized by a high temperature and great toxemia and where the patient fails to respond to a regime of absolute rest. Results are obtained in cases where the lesions are unilateral and, better still, unilobar.

3. In my experience the most numerous of our series are those cases of unilateral, unilobar cavitation. Until the advent of pneumothorax the outlook for these cases was a very black one. While running a chronic course the patient with a cavity usually advanced to an inevitable end. A successfully induced collapse of the lung offers these people a chance of not only securing an arrest but a closing of the cavity and a fairly complete functional recovery.

It is very true that in a large portion of these cases we canot by reason of adhesions succeed in establishing an ideal collapse of the lung, with its attended benefits. But adhesions, unless they be too thoroly organized and dense, will sometimes yield surprisingly to a steady and consistent application of interpleural pressure extending over a period of months.

Acknowledgment is due Drs. Mattson, Mattson and Bisaillon, of Portland, for much information and inspiration.

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TROPICAL SPRUE WITH AUTOPSY FINDINGS*

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Patient was a woman, aged 63 years, the wife of an army officer who resided for some time in the Philippines. Her family history was unimportant, as was also her past history. She had always enjoyed robust good health.

Her illness began after she had been in the Philippines for some time. She suffered with frequent attacks of uncontrollable diarrhea, with which there were always associated soreness, burning and ulcerated condition of the tongue and mucous membrane of the mouth. The diarrhea was accompanied by severe tenesmus and burning in the rectum. The stools were voluminous, of a light yellow color and contained multitudes of air bubbles.

Her trouble was diagnosed as sprue and appropriate dietetic treatment was given, with advice she leave the islands and return to the States. The change of climate improved her greatly and the state of her nutrition became excellent. She attained a weight of 180 pounds at one time. Since then, however, she has had repeated replapses of her former trouble at varying intervals, each showing the same characteristic sore mouth, tenesmus, burning and diarrhea. She gradually lost weight and strength in spite of anything that was tried to relieve her symptoms.

My observation of the patient began in May, 1921, and continued up to the time of her death, which occurred in November, 1923.

Her physical examination when first seen presented the following significant findings- She was senile, quite pale and somewhat emaciated. The tongue showed several red glazed-appearing superficial erosions, chiefly on the edges and under surface. Some of these erosions also were present on the mucous membrane of the lips and cheeks. The pharynx showed the same dry reddened surface with no ulcerations. The skin was dry. There was no glandular or splenic enlargement. The heart and lungs were normal. The liver by percussion seemed smaller than normal. The abdomen was distended and tympanitic, with tenderness thruout. There was a complete prolapse of the uterus, with edema, swelling and excoriation of the vulva. The rest of the physical examination was entirely negative.

At this time she was put on the appropriate diet, with the various lines of therapy recommended in sprue. A period of several weeks abatement of symptoms with some gain in weight and strength was invariably followed by a similar period of uncontrollable diarrhea which rapidly reduced the patient to a state of utter exhaustion. The bowel seemed gradually to lose its power to assimilate food. It was impossible to stop the gradual decline. Emaciation became extreme and with it came new complications.

She had several severe attacks of angina pectoris. The relaxation of the ligaments about the spine, sacrum and hip joints made it impossible for her to walk on account of pain. She became bed-ridden. The stools became involuntary. Tetany developed with rigidity of the jaw muscles, fingers and hands. In the terminal stage of the disease, a hemorrhagic diathesis appeared. The patient bled from the nose, gums, kidneys, vagina and rectum. On account of this bleeding, with the accompanying severe anemia, two blood transfusions were given, each producing temporary slight improvement. She rapidly lapsed into her previous condition. Exitus was directly due to bronchopneumonia.

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* Read before Portland City and County Medical Society, Portland, Ore., Feb. 20, 1924.

* The writer is endebted to Dr. G. W. Millett for his kindness in performing the autopsy in this case and for his careful study of the pathologic sections.

The blood count in May, 1921, was hemoglobin 90 per cent, red blood cells 4,320,000, white blood cells 9,100; differential count: neutrophiles 65 per cent, eosinophiles 1½ per cent, basophiles 2 per cent, small lymphocytes 2½ per cent, large lymphocytes 21 per cent, large mononuclears and transitionals 8 per cent.

The urine was negative.

The stool was unformed, voluminous, full of gas bubbles, foul and of a light gray color, due to excess of fat. It contained no blood.

A specimen of the stool was sent to Dr. Bailey Ashford, in Porto Rico, for culture with the result that monilia psilosis was found to be present.

The autopsy in this case revealed the following points of interest: The skeletal muscles were markedly atrophic. There was practically no subcutaneous fat. The heart was moderately enlarged, being about twice the size of the owner's fist. Walls of the right heart were very thin and evidence of recent dilatation was present. The tricuspid orifice admitted three fingers easily. The left ventricle walls were much thinner than normal. Mitral valves were normal. Aortic and pulmonary valves were normal. Coronary arteries showed a moderate amount of sclerosis. The aorta contained a few plaques which were typical of senile sclerosis.

Liver showed no gross abnormality. Spleen was very small, measuring 2x1½x1 cm., weighing only 14 gm. Gross appearance of pancreas was normal. Gross examination of the stomach and bowels showed no abnormalities except that the villae were not very prominent. There was no evidence of ulceration or scar formation thruout any part of the bowels.

Pelvic organs were negative except for a small fibroid. Kidneys were one-third smaller than normal size and a few small cysts were present in the cortex. Cortices of both kidneys were thinner than normal.

Microscopic examination: Section of the lungs show healed tuberculous process. The posterior portions of lobes show hypostatic congestion.

Sections of the heart muscles show a marked brown atrophy thruout.

Sections of the liver show moderate amount of fatty degeneration. In some areas considerable fibrous tissue has formed about the bile ducts and at the peripheries of the lobules. No amyloid degeneration noted.

Sections of the pancreas show it to be apparently normal.

Sections of the spleen show it to be made up mostly of fibrous trabeculae with a few malpighian corpuscles and spleen cells in between. In a few areas a slight amount of hyaline change has occurred.

Sections of the stomach show an atrophy of the glands in the fundus and pyloric regions. A moderate amount of round cell induration is present in the submucosa.

Sections from various parts of the small intestine show marked atrophy of the intestinal glands thruout and a thickening of the submucosa, due to round cell induration and fibrous tissue formation. Very few normal lymph nodules appear to be present but these are replaced by an induration and fibrous thickening of the submucosa. In sections of the large bowel the crypts of Lieberkühn are very shallow and a characteristic atrophy is present as in the mucosa of the small bowel.

Sections of the mesenteric lymph nodes show no apparent abnormality.

Sections of the kidneys show a chronic diffuse nephritis, involving both glomeruli and tubules.

Suprarenal glands are normal.

Diagnosis: Hemorrhage from gums, nose, and uterus, healed tuberculosis right lung., moderate hypostatic congestion both lungs, moderate dilitation, right heart: marked brown atrophy of heart muscles, sclerosis of coronary arteries, fatty degeneration of liver, atrophy and hyaline degeneration of spleen, atrophy of the mucosa and chronic inflammation of the stomach, small and large intestines, atrophy of the uterus, subserous fibroid of uterus, fibrous cystic ovary, chronic diffuse nephritis. *

Tropical sprue is a disease which is rapidly assuming importance in this country, particularly along the Atlantic and Pacific seaboards and in the southern states. More and more cases are being reported in American journals, the most recent report by Bastedo containing data on thirteen cases. This is as one would expect from our constantly growing interchange of population and commodities with the various tropical countries.

The idea that sprue is essentially a disease of the tropics is gradually being refuted. Cases have been described in patients who have never been out of the United States. Wood[1] reports a case developing in New Hampshire. Bovaird reports one, where the patient developed a sprue while living on Long Island two years after returning from Porto Rico and other cases are described, where sprue has developed in this and other temperate countries at intervals ranging from months to seven years from the date of sojourn in tropical climes.

The most comprehensive description of the disease is the one by Sir Patrick Manson[2], of the London School of Tropical Medicine. It has, however, been known in medical literature since 1776, when Hilary wrote the first good description of the disease. A more modern study of psilosis has been made and reported by Bovaird[3] who bases his conclusions upon a thoro scientific study of thirteen cases. A similar scientific study has been made by Bastedo and Famulener[4]. Other writers who have contributed to our knowledge of sprue are Ashford, Michel[5], Rogers[6], Castellani[7], Brown, Bahr and Wood[8]. The whole subject of the etiology of the condition is as yet in a somewhat confused state. Barker[9], Castellani, Bastedo, Bovaird and others state that the etiology of the disease is as yet unknown and unproven. On the other side of the etiologic controversy, stand Ashford and Michel, both of whom have had a tremendous experience in studying sprue in Porto Rico.

Ashford[10], in 1915, first described a monilia which he claimed to be the cause of sprue and which he later named monilia psilosis, as distinguished from monilia albicans, known to be the etiologic factor of infantile sprue. In two later articles he substantiated his claim, adding as a further factor a deficiency in certain food elements. His contention is that typical sprue is preceded by a physical and glandular deficiency which causes a reduction in the output of the pancreas and digestive glands. This change in the reaction of the intestinal contents produces a medium, in which monilia psilosis can thrive, just as monilia albicans comes as a secondary invader in the gastroenteritis of marasmic infants and cachectic senile patients.

He[11] has cultured a monilia which could be isolated from the tongue and feces of sprue patients and also from the tissues of persons dying from the disease. Michel, working with Ashford, used monilia psilosis antigens and obtained complement fixation in cases of sprue. These cases had been diagnosed previously and the monilia had been cultured from the stools by Ashford. By the injection of an emulsion of killed cultures into animals, an immunity was produced which pointed to specificity of the organism. He demonstrated that endotoxins were the active toxic substances. Animals thus injected developed a relative immunity to injections of living cultures. Michel treated 81 cases, of which 62 had completed treatment. Of these 62 patients, 49 were discharged cured, 12 improved and one died.

Ashford[12] has described in detail the morphology and cultural characteristics of his monilia and has thereby differentiated it from monilia albicans. Bahr, on the other hand, says that the two are identical and that monilia albicans, ordinarily of low virulence, assumes added pathogenic properties in the tropics. Bovaird was unable to find monilia in any of the mouth lesions of his thirteen patients and only once was monilia albicans cultured from the stool. Brown also met with failure in his cases. Bastedo, in cultures made from tongue curettings and stools in five cases, grew monilia in four instances. Three of these gave different cultural characteristics on each separate planting and the fourth was the only one that gave the characteristics of Ashford's monilia. The consensus of opinion at present seems to be that monilia is an important accompaniment of the disease.

Pathology. Manson has given the best description of the pathology of the disease. The striking points are tissue starvation and wasting; thinning of the bowel wall with denudation of the epithelium of the tongue and intestines at times going on to the formation of eroded, ulcerated or cicatricial patches and complete erosion of intestinal villi. Bahr describes large and small hyaline areas in the spleen which he regards as characteristic of sprue, having failed to find them in other conditions.

Clinically the disease is one of faulty digestion and assimilation. There is a tendency to achylia gastrica and pancreatic achylia. The stools are acid, voluminous, pale gray, rarely foul and contain much gas and undigested fat. The blood generally shows a secondary anemia or may be normal. There is a tendency to leukopenia, with low proportion of polymorphonuclears. The urine shows nothing characteristic.

The *diagnosis* must be made on the history, symptoms, physical and clinical findings, unless one accepts as final the work of Ashford and Michel. The prognosis varies probably with the stage of the disease. Under suitable diet many early cases recover and apparently remain well indefinitely. It is doubtful if the old, well developed cases ever recover.

The *treatment* is essentially dietetic. It consists in the main of a diet of fruits and protein. Starches and fats must be restricted. Manson's diet of strawberries and skimmed milk seems to be the most efficacious and widely used treatment. When the acute symptoms are thus controlled, one adds slowly other fruits, vegetables, salads, eggs, fish, chicken, bouillons, and tender meats. Brown gives acid, pepsin and pancreatic extracts on the basis of achylia. Other treatment is purely supportive and symptomatic. Our patient responded best to injections of iron cacodylate. Ashford kindly sent us some of the vaccine they were using in the Porto Rico cases. We tried this on our patient with no relief whatever. In fact we were obliged to discontinue this line of treatment after the sixth injection so severe were her reactions.

No discussion of this case would be complete without an added word on the occurrence of tetany and hemorrhage as late complications. From a perusal of the literature they are apparently rare conditions. Bassett-Smith[13] reported a case of tetany in a patient with advanced sprue. Baroch and Murray[14] described a case lasting four days in one of Bovaird's series. Bovaird himself mentions a third, occurring in 1921. In these two cases they found a lowered calcium content in the blood. In one, the blood calcium ranged from 8 to 6.5 mg. per 100 c.c. against a normal of 9 to 11 mg. They used intravenous infusions of 0.2 per cent calcium lactate with some relief of symptoms.

In our patient the tetany occurred within the last few months of her illness. At the first sign of spasm of the fingers, calcium lactate was given by mouth with some relief. Later the symptoms returned with renewed severity and this time with bleeding from the nose, gums, vagina, bladder and rectum. While no chemical determinations of blood calcium were made, it was our conception that a calcium deficiency was responsible for the muscular spasm and impaired coagulation time in this case. The idea suggests itself to us, therefore, that it might be a wise precaution in all sprue cases to supplement our therapy with the administration of calcium either by mouth or intravenously.

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GAS GANGRENE (B. AEROGENES CAPSULATUS). ITS RECOGNITION AND TREATMENT. INCIDENCE IN CIVIL PRACTICE IN BRITISH COLUMBIA *

A. S. Monro, M.D., C.M., F.A.C.S.

VANCOUVER, B. C.

(Concluded)

CASE REPORTS

Case 1. J. B., age 40, logger, admitted to Vancouver General Hospital Aug. 6, 1923, twelve hours after accident, in which a severe laceration of right hand, and simple communited fracture right tibia and fibula were sustained.

Patient suffered a good deal from hardship of transportation and, when he reached hospital about 3 a. m., was given immediate attention. The laceration of right hand was quite extensive, involving particularly the muscles and skin of the thenar eminence with fracture of metacarpal bone. The parts were first well cleansed with soap and water, followed with antiseptic solution and then all badly bruised tissues were excised so far as possible without destroying the possibility of saving the hand. Free drainage was established and dressing applied. At 8 a. m. the limb was inspected, dressings being removed. The skin of forearm was somewhat tense but of good color and warm moist dressings applied frequently were ordered. During the afternoon the limb was again inspected and examination revealed definite crepitus half way to the elbow.

A consultation was held and amputation was decided upon. Before fixing the point of amputation transverse incisions were made in the forearm at different levels to ascertain the extent of the spread of the disease. The muscles were grey and bloodless up to within a couple of inches of the elbow joint, so amputation was carried out at junction of middle and lower thirds of humerus. The flaps were left open except for a couple of sutures to help hold in packing soaked in Dakin's solution loosely applied to the stump end. Treatment of the stump with Dakin's solution was continued for several days, when, no further evidence of spread of the disease occurring, it was discontinued and secondary suture of the flaps was done. A cigarette drain was kept in for a few days longer.

In the meantime the fractured leg, which had been in a box splint, was placed in a Thomas splint. It did not take long to demonstrate the intolerance of the tissues subjected to pressure by the ring of the splint, as a large abscess quickly developed in the buttock and a smaller one on the inner side, necessitating the removal of the Thomas splint and a return to the box splint. Numerous small abscesses broke out on the back and altogether it required three or four weeks of intensive treatment before this complication was overcome.

The rapid development of the infection in less than twenty-four hours following injury is to be noted in this case; the exposure, fatigue and transportation in ordinary gasoline boat no doubt contributing largely to this.

Laboratory finding from culture at time of operation showed presence of B. aerogenes capsulatus.

Case 2. Reported by Dr. J. W. Thompson. John W. Faulkner. This man was admitted to the hospital at 1 p. m., Aug. 22, with a lacerated wound three and one-half inches long, situated transversally about four inches above the knee joint, caused by the bite of a bear. The wound had entered the muscle fascia and had lacerated the vastus intermnus muscle, but had not penetrated any blood vessels.

Under local anesthesia, the wound was thoroly swabbed with iodine, iodoform gauze being left in the wound for several minutes. The muscle was then closed with interrupted sutures of plain catgut, muscle fascia with plain catgut also and skin with silk worm gut. A small gutta percha drain was inserted down into the muscle at either end of the wound and 5000 units of antitetanic serum given patient, this being done at about 2 p. m.

That night the temperature rose steadily until it reached 104.5° at 8 a. m. the next morning. The wound did not seem very much inflamed. There was a suspicion of crackling above the wound; it was opened completely and the muscle gave the appearance almost of a partially cooked condition, with no bleeding whatsoever. Swabs were taken from the wound which was then washed out with hydrogen peroxide. The swabs were examined by laboratory and at 11:30 a. m. Dr. Mullin reported the condition as that of bacillus aerogenus encapsulatus.

In the afternoon the crackling appeared quite definite along the course of the saphenous veins and lymphatics. At 4 p. m. he was given general anesthetic, skin and superficial fascia were thoroly opened by incision, tubes were inserted between the incisions and the whole fascia irrigated with peroxide. Following this patient returned to ward, was given Dakin's irrigations and put on quinine sulphate (grs. ii, O. H. 4).

Aug. 25, at 4:20 p. m., there was profuse bleeding from the upper wound and it had to be packed. Irrigations were continued and, altho there still remained a definite crackling which had spread to above Poupart's ligament, where it was opened under local anesthesia, nothing eventful happened until 9:30 a. m. on the 26th, when the patient took a severe chill lasting eight minutes. The packing was removed from the upper wound and profuse bleeding occurred which necessitated the wound being repacked. The pulse was small and thready.

At 6:30 p. m. Cheyne-Stokes respirations developed and his respiration became more and more labored. His blood was grouped and his two brothers were brought to the hospital, one of them being in the same group. By 4 p. m. the man was pale, his pulse thready and there was a definite air hunger and frothing at the mouth. At 4:30 blood transfusion was given; the man's condition improved markedly. We then had a number of firemen brought to the hospital and kept seven of them ready. By 7.45 apparently the effect of the first transfusion had worn off and the man was in a desperate condition. A second transfusion was given.

The condition remained good for some time. By 5:30 a. m. the next morning, the breathing became bad again, there was twitching of the face and the patient felt chilly. He perspired profusely that night. At 9 a. m. a third transfusion was given. Following these transfusions, the man had a lot of heartburn.

On the 28th he seemed to develop a mixed infection on the inner and upper part of the thigh, possibly due to the fact that it was very hard to keep these wounds absolutely sterilized. The infection looked like a streptococcic one; 20 c.c. of antistreptococcic serum was given. The man was more or less irrational from Aug. 28 to Aug. 31.

On Aug. 31 an offensive odor, like gangrene, came from the wound and this continued for some time. Following the profuse bleeding, which had occurred in using Dakin's, the irrigation solution was changed to potassium permanganate and after the 31st fomentations of potassium permanganate were used.

The man made an uneventful recovery and on Oct. 6, the wounds, which had not already closed themselves, were closed by undermining the skin and drawing skin and tissues together.

Case 3. Reported by Dr. Lachlan McMillan. James C. Swan. Injury occurred morning of Oct. 8, when a piece of steel entered the biceps muscles of the right arm. Patient called late in the afternoon of October 8, when x-ray was ordered. He again returned in the afternoon of Oct. 9, when x-ray showed fine filament of steel embedded in center of right biceps muscle. An unsuccessful attempt was made the same evening to remove the foreign body and, in spite of the use of the x-ray plates and fluoroscope (which by the way did not show the foreign body), after a thoro search the arm was closed without drainage.

The following afternoon between four and five p. m. his temperature rose and the arm became limits of which reached to the axilla.
swollen and red. At 7:30 o'clock examination revealed the presence of gas in the arm. The upper
Consultation was held with Dr. D. Perry and immediately an operation was performed, consisting of opening of the arm from the shoulder to the insertion of the lower end of the biceps muscle. The fascia of the biceps muscle was opened and the muscle exposed thruout, and separated from the surrounding tissues. Fibers of the muscle were separated into four bundles and Dakin's tubes inserted thruout and surrounding the muscle from end to end and continuous irrigation was done.

Progress of the case was satisfactory and infection controlled. On Oct. 17 third operation was performed for closure of the wound. Drainage and irrigation continued for several days.

At present the patient is up and around, wound clean. Sutures will be removed in a few days and his discharge from the hospital is expected within a week. He will be able to return to work within a month.

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THE ETIOLOGIC RELATIONSHIP BETWEEN CERTAIN NASAL AFFECTIONS AND BRONCHIAL ASTHMA

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The present communication is incited by a recent article by Kahn on "Nasal Operations in Bronchial Asthma" (*J. A. M. A.*, 1924, lxxxii, 536), in which the author says he does not believe there exists any etiologic relationship between nasal conditions and asthma. He has noted the two conditions existing in the same individuals but he says there is no evidence that the two groups of symptoms stand in the relation of cause and effect. And the relief which asthmatic patients experience following nasal operations he attributes to coincidence.

Kahn, in noting the effects of nose and throat operations on thirty-three cases of asthma, did not find the paroxysms relieved in a single instance, and his conclusions are (1) the nose and throat should be left alone in asthma, except when the rhinologic condition itself demands attention; (2) it is not to be expected from an operation on the nose that the asthma will be at all influenced.

Let us now analyze the nature of nasal operations which received such a sweeping condemnation. Kahn states that in fifteen cases relief of nasal obstruction was obtained, and in another place he adds, "even in patients, in whom there was definite relief of obstruction and in whom nasal breathing became free, the asthma was not influenced." Does the author entertain the belief that an operation to relieve nasal obstruction is the type of operation to study in determining the influence of nasal operations in general on asthma? Personally, I would not promise nor expect much from an operation that simply relieves nasal obstruction. The type of nasal condition that really has some influence on asthma is not the obstructive conditions per se, but those conditions which act as harbingers of bacteria, the low grade sinus infections, manifested not so much by the formation of pus as by the presence of polypoid degeneration of the lining membrane and sometimes by the presence of true polypi. Of course, nasal obstruction may be present, but the mere relief of the obstruction would not be proof that the pathologic condition had been adequately removed.

Another sentence of the author's even seems to admit this latter contention, for he says, "In most cases the improvement that resulted, *even as concerned the local condition* (italics ours), was only temporary and incomplete; and in many cases the local condition for which the operation was performed recurred."

Of course, if the local condition was not improved, the general condition would scarcely be benefited. As well might one discredit the entire theory of focal infections because incomplete operations failed to produce results.

The explanation of the relationship between nasal conditions and asthma has been nowhere more adequately made than by Shambaugh in his article, "The Nasal Cavities and Asthma" (*Ill. Med. Jour.*, 1921, xxxix, 10), in which he presented the following conclusions:

"1. Asthma is often associated with very definite pathologic changes in the nasal cavity.

"2. The pathologic condition associated with most cases of asthma is the condition known as hyperplastic ethmoiditis.

"3. The condition is not only associated with most cases of asthma, but its correction has often a very decided influence on the asthma.

"4. The relation between the nasal condition and asthma appears to be not so much one of a reflex nasal neurosis as it is that of an anaphylactic reaction.

"5. The improvement in the asthma resulting from operations on the ethmoid may be due to the elimination of foci, harboring bacteria and their toxins.

"6. Hyperplastic ethmoiditis frequently exists for a long period of years without any tangible evidence, such as the presence of nasal polypi in the nasal cavity. The diagnosis in such cases is made by forced inspection of the floor of the ethmoid in the middle meatus by anterior rhinoscopy or by means of the postnasal mirror.

"7. Anatomic variations, tending to interfere with the normal ventilation of the ethmoid, especially the high deflection of the nasal septum, may sometimes act as an etiologic factor in the production of hyperplastic ethmoiditis.

"8. A cure of the hyperplastic ethmoiditis, especially in the early stages, may sometimes be accomplished by overcoming the impaired ventilation of the ethmoid cells, that is, by correcting the deflected nasal septum and by removal of the middle turbinated body.

"9. Some cases of asthma are permanently cured by an exenteration of the ethmoid. In other cases the asthma returns when the polypi reform. In some cases the asthma appears to be but little influenced by the operation on the ethmoid. The explanation of the latter cases may be that the frontal and maxillary sinuses are also the seat of polypoid degeneration."

On this basis nothing short of a complete nasal operation should be considered in determining whether or not nasal operations influence asthma.

Heatly and Crowe have shown this in their article on "Asthma and Infections of the Accessory Nasal Sinuses," (*Bul. Johns Hop. Hosp.*, 1923, xxxiv, 410), in which they report the results of their study of 62 cases of asthma, in order to determine, (1) the value of operations on the nose and accessory sinuses as part of a therapeutic program in asthmatic patients presenting pathologic conditions in that region; and (2) the type of operation (whether simple or radical) which in their experience has proved most useful.

They conclude "that indiscriminate operations on the nose and accessory nasal sinuses of asthmatics are to be condemned; that, if attempted, they must be properly indicated and radical in the sense that they aim to eradicate all existing regional infection. Operative measures, so attempted, will improve a very definite proportion of asthmatic cases. They should, however, always be undertaken as a part of a general therapeutic program."

In the absence of a statement by Kahn as to whether or not the operations in his series of cases were "properly indicated and radical in the sense that they aim to eradicate all existing regional infection," I for one would attach no importance whatever to the results in his cases.

In conclusion, I might add only a note of caution concerning the attitude to be taken toward this question of the relationship between nasal conditions and asthma, and that is, not to expect the impossible. Asthma cases are divided into one of four groups: (1) the animal emanation group, (2) the food group, (3) the pollen group, and (4) the bacterial group. Only those cases falling in the last group can be benefited by nasal operations. Until such a preliminary study has been made, any remarks relative to the influence which nasal operations exert on asthmatics are worthless.

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ACUTE PERFORATION OF JEJUNAL ULCER

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Acute perforating ulcers of the jejunum following gastroenterostomy are relatively rare. Wright[1] collected thirty-two cases from the literature. Henry[2] reports a cast of five recurrent gastric perforations, some of which occurred in the wall of the jejunum and in the line of suture of the stomach and jejunum.

REPORT OF CASE

History. T. P., age 36, male, student in a local chiropractic college, was admitted to St. Vincent's Hospital, at 12:30 a. m., complaining of distressing and agonizing pain in the epigastrium. On the evening of his admission he attended class, and was suffering considerable pain in the "pit of the stomach." At 9:00 p. m. of the same evening, when he was leaving the class room, he felt something suddenly give way in the abdomen. The suffering was so severe that he was all doubled up and he could not talk nor walk. After lying down on the floor, the pain eased up. A physician who was called in gave him a hypodermic and also some bismuth subnitrate. when the bismuth was taken there was a feeling of something pouring out in the abdomen. Three hours after this attack he was taken to the hospital.

A week previous to the admission he had a similar attack, only not so severe. There was also a sudden pain in the epigastrium; he was feeling quite sick and nauseated and spent two days in bed. Milk or buttermilk, which usually gave him relief, gave no comfort at that time.

On further inquiry it was found out that there had been periodic attacks of pain and distress in the epigastrium, coming on about an hour after eating or in the middle of the night. Most frequently food and soda bicarbonate "almost instantly" relieved the painful attacks. At other times nothing was found to give relief. The past history revealed that he was operated on for an acute perforated duodenal ulcer in 1918, and that he had a gastroenterostomy performed nine months later in 1919.

Physical examination. The patient was a fairly well nourished, pale looking adult, complaining of agonizing pain in the epigastrium. The face looked distressed. He kept his hand on the epigastric region, constantly squirming and undergoing various contortions. Examination of the lungs, cardiovascular and nervous systems exhibited no abnormal findings. The abdominal wall was extremely rigid and unyielding, with marked tenderness in the epigastrium.

Considering the history of the previous attacks of severe epigastric pain relieved by ingestion of alkalies, a history of an operation performed for a perforated duodenal ulcer later followed by a gastroenterostomy and the findings of an acute abdomen, the diagnosis of a perforated ulcer was made. The perforation was considered as most probably in the jejunal wall. The patient was, therefore, hurried to the operating room at once.

Operative Procedure. A median incision from the ensiform cartilage to the umbilicus was made, excising the old scar. Upon separating the omental adhesions between the viscera and peritoneum, a dilated loop of jejunum presented itself which contained a circular perforation about 0.5 cm. in diameter. This perforation was in the distal part of the jejunum near the gastroenterostomy opening. Gas and chyme were constantly and forcibly exuding from the perforation; also whitish particles which were evidently the bismuth salt given by the attending physician. There were also two dark red areas, each about 1 cm. in diameter along the gastrojejunal anastomosis. These were penetrating gastrojejunal ulcers covered by fragile inflammatory granulations and walled off by omental adhesions. The gast enterostomy was of the posterior type, the distal jejunal loop being quite dilated. The perforation of the jejunum was closed by inversion and sutured with linen. The other two penetrating marginal ulcers were inverted with catgut. Cigarette drain was used and removed in forty-eight hours. Recovery was uneventful.

The case is reported for the purpose of putting on record an acute perforation of a jejunal ulcer, of which only thirty-three such cases are found in the literature. This case is also of some interest, since the patient had suffered one acute perforation of a duodenal ulcer which was successfully operated upon, followed nine months later by a gastroenterostomy which finally resulted in an acute perforation of a jejunal ulcer and several penetrating marginal ulcers.

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BOBBING HAIR WILL NOT MAKE IT GROW

Don't bob your hair to make it grow faster!

Bobbing the hair for esthetic reasons is quite proper, providing your mother, your husband, or your grandchildren do not object, but says Dr. Herman Goodman in the April Hygeia:

Grows One Inch in Six Weeks

"Cutting the hair (table talk to the contrary), does not improve its growing qualities. Under general conditions, it takes a hair about six weeks to grow one inch.

"However, not all the hairs of the scalp, even if uncut, would grow to the same length. On the crown and the back of the head, the hair may grow 40 to 50 inches and be not unusually long, while at the sides 18 inches is generally the limit. In men, of course, such long hair is very uncommon and with the fashion, it becomes increasingly unusual among women."

Dr. Goodman makes another statement, surprising to the uninitiated. The years when the hair grows most quickly, he says, are those between 35 and 60.

If you find a hair on your coat collar, don't get nervous, this hair specialist advises. The hair is continually shedding and regrowing and in the healthiest of persons a hair grows old, is lost, and a new one takes its place.

NORTHWEST MEDICINE
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EDITORIAL

PIERRE CURIE *
1859-1906

MARIE CURIE
1867-

The recent visit of E. C. Kendall, discoverer of thyroxin, to two cities of the Pacific Northwest, in which he lectured before medical societies, describing the almost unbelievably painstaking labors which resulted in that discovery, serves to focus attention on chemistry and chemists and the debt that medicine owes to the devotees of the test tube. Pasteur, who contributed most to the cause of good health, was a chemist. Pierre and Marie Curie, who followed him and derived inspiration from his work, are fit subjects for study and emulation.

Those who are skeptical of heredity in producing better men (no intelligent person doubts the evils of bad heredity) may contemplate the ancestry of Pierre Curie as an argument in refutation of such skepticism. He was the son of a physician, whose father was a physician. In boyhood Pierre exhibited remarkable powers of concentration and contemplative philosophy, but because he seemed "slow of mind" he did not pursue the usual courses of study of his youthful contemporaries and he received most of his early education in his home. Yet at the tender age of fourteen, at which time he was put under an excellent professor, he showed talent for mathematics. Soon he "began to launch out into personal investigation". He spent long hours in the woods, lost in thought, and in a scant and spasmodic diary he refers to the annoyance of routine and puerile duties, borrowing as his text a line from Victor Hugo, "to deafen with little bells the spirit that would think." His entry into chemistry was thru the study of physics, where his powers of "acute analysis" were devoted to problems connected with the determination of the length of heat waves. Later, apparently influenced by the labors of his great predecessor, Pasteur, he gave much time to crystallography, and in collaboration with his brother, Jacques Curie, in 1895 presented a paper reporting his researches on crystals which won for them the Planté prize.

One cannot review the life histories of Pasteur and Curie without being struck by the difficulties which both of them met and overcame. Both worked under conditions that in this country would be regarded as poverty-stricken. At the age of thirty-five Curie's total income was but three hundred francs per month, a stipend comparable with that of a day laborer, and for years thereafter it was but six thousand francs per year. His work was done in small illy equipped rooms, with scant apparatus, and he received little encouragement or assistance.

In 1895 came the great event in the life of Curie. He took to wife Marie Sklodowska, a Polish girl and a kindred spirit, whose name will forever illumine the scroll of the immortals. About this time Henri Becquerel accidentally discovered that uranium compound, coming in contact with photographic plates covered with black paper, produced a reaction analogous to that of light. Pierre and Madam Curie found in this a special significance and the latter "made the hypothesis" that this reaction was due to the presence of an undiscovered element that existed in uranium and thorium ores. Out of their scant purse the Curies secured in Bohemia several tons of pitchblende, a uranium ore, and removed it to Paris. While Pierre devoted his time to the physics of radioactivity, Marie devoted hers to the isolation of this alluring substance. With only an old shed which was not even rainproof for a laboratory, she worked endlessly over vats and kettles, containing boiling material, stirring, stirring with an iron bar, and alternating her time between this work and the care of her household and first-born child. She states that work which took four years could easily have been accomplished with proper assistance and money in one year; and for the sake of a paltry sum, such as is not infrequently wasted in a single night's entertainment by members of the fashionable world, three years were in part wasted out of the exceedingly valuable lives of these great scientists.

In 1898 the Curies were able to announce the existence of polonium and radium. "However, 1909 was the year in which the existence and character of radium was definitely established." In 1905 the Curies shared with Henri Becquerel the Noble prize for physics, and life became triumphant for both of them, a triumph cut short by the death of

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* Pierre Curie. By Marie Curie. The Macmillan Co., New York.

Pierre who, still a young man, was run over by a truck and instantly killed.

The characteristics of the Curies were those of extraordinary modesty and selfeffacement. Pierre repeatedly refused to receive honors that were offered him, having small patience with what, to his scientific mind, must have seemed childish byplay. Both possessed the ability to visualize and pursue the vision and to stick to detail and minutiae. They gave the world the results of their labors freely and without price. Others, who became interested in researches on radium, were told exactly what they had done, for both of them believed that such discoveries as they had made and were making belonged to all mankind.

Many persons prefer to work in the fine arts and sciences; others prefer broad generalizations. The former make the great analysts, the latter the great executors and administrators. The former work painstakingly, quietly, obscurely, seeking no personal reward and giving freely the products of their genius, as the Curies gave to humanity the technic of isolating radium. The latter receive the oft undeserved plaudits of the world; but when the former on rare occasions evolve some great discovery, they become part of history, while the latter in the main are forgotten with the passing of the generation in which they lived. And so the Curies became and will forever remain benefactors of humanity, especially that part of humanity whose vocation is the art and science of medicine and surgery.

WATER AND HEALTH

There was a period in the past when the popular opinion prevailed that it was injurious to drink freely of water. People had the notion that water drank at meal time diluted the gastric juices and, therefore, interfered with digestion. It was at this same period that the fever patient was sentenced to slack his thirst only with boiled water fresh from the teakettle under the belief that cold water would chill the system and expose the patient to taking cold. Happily these semibarbaric beliefs have gone to the discard and a rational view of the benefit of drinking water is generally entertained. Yet, even today, many people, including some physicians, fail to realize the many common disturbances resulting from an insufficiency of water consumption.

When one realizes that the body is two-thirds composed of water and that this proportion must be continually maintained, he will realize that a liberal intake is necessary. The slogan "drink six glasses of water every day" should be drilled into the mind of every individual as soon as he is old enough to comprehend its meaning. Many an individual afflicted with chronic constipation obtains relief when he starts the morning with drinking a pint of water. The popularity of most of the famous mineral springs in Europe and this country is due to the fact that the patient under compulsion will drink a gallon or more of water daily, the more vile the taste the greater being its supposed efficacy. The copious flushing of the kidneys and bowels, supplemented by the abundant sweat from the hot baths, effect the reputed miraculous cures from rheumatism, Bright's disease and other ailments. If the individual at home would consume the same amount of water, containing a similar amount of purgative salts, he would likely obtain the same results. But, alas, what an individual pays good money for at a distance from his home and under novel conditions, he scorns to duplicate under his own roof, thus avoiding the expenditure of his hard earned dollars.

The physiologic effects of water in softening the food, diluting digestive juices, regulating the body temperature by distributing heat and removal of waste products, are familiar to the physician but known to few laymen. The average physician will confer a great favor on his patients if he emphasizes the blessings they will receive both from a corrective and prophylactic standpoint by daily drinking freely of water in much larger quantity than the ordinary individual considers sufficient.

THE RUNNING ENGINE IN THE CLOSED GARAGE

Every now and then the morning paper announces the death of some man whose body was found on the floor of his tightly closed garage, where he had been adjusting the action of his engine. His death was due to carbon monoxide poisoning, ejected by his engine which in his ignorance he had permitted to idle with doors and windows closed. The Interior Department at the Pittsburgh Experimental Station of the Bureau of Mines has recently disproved the dangerous fallacy that the atmosphere in a closed garage is safe as long as an automobile engine continues to function. A dog was placed on the drivers seat of a touring car, in a brick garage of about 3,000 cubic feet and the engine allowed to run at idling speed. The doors were closed and after twenty minutes the dog lost consciousness and fell to the floor of the car. Analysis of the air disclosed the presence of 2.1 per cent of carbon monoxide, which is sufficient to cause unconsciousness and death in a few minutes. The engine continued to run for two hours, until it stopped for lack of air, when the percentage of carbon monoxide was found to be 3.1, an almost instataneously fatal amount.

Attention is called to the danger of anyone entering a closed garage for the purpose of shutting off a running engine. A motorist might easily have such an experience when, after starting his engine, he returns to the house for something he has forgotten, leaving the door of the garage closed. Such a dangerous concentration of carbon monoxide might occur in so short a time that he might easily encounter an atmosphere sufficiently charged with this gas to render him unconscious in two or three minutes and to cause his death if not promptly rescued. Before warming up his engine or making adjustments with the engine running, any cautious motorist will have the doors and windows of his garage open or else drive his car into the open air, where the poisonous gas is quickly dissipated.

PACIFIC NORTHWEST MEDICAL ASSOCIATION AT VANCOUVER

Last month attention was called to the forthcoming meeting of Pacific Northwest Medical Association, to be held at Vancouver, British Columbia, June 26-28. Work of the committees appointed to deal with various details of this meeting is now well under way, and it is possible accurately to forecast much of the proceedings. The convention will be held at the height of the summer season, and at a time when the weather will be all that can be desired. The battleships of the British Navy, which are now on their world tour, will be in the harbor at about the time of the convention, and opportunity will be afforded to visit and inspect two of the mightiest fighting machines the world has ever seen, H. M. S. Hood, and H. M. S. Repulse. They are to be met by a squadron of the United States Navy at Vancouver.

A strong entertainment committee has been appointed which is preparing a program of entertainment, of such a nature that everybody will find something of interest to himself. Vancouver possesses several very fine golf links, and provision will be made for those who care to play. A trip is contemplated to Alaska, and any who wish to take this will find themselves well repaid by the unique beauties of the voyage. For visiting doctors' wives or ladies accompanying them, arrangements are being made by a ladies' committee. Vancouver is well supplied with bathing beaches, readily accessible from the heart of the city, and these prove a great attraction to visitors. Trips by water to summer resorts close to the city and up the North Arm of Burrard Inlet are made daily by well-found and comfortable boats.

As regards the program itself, this is naturally the kernel of the convention, and full details will be given in announcements sent out from time to time. A brief reference, however, to some of the speakers, will show the reader what he may expect. Sessions of the Association will be held in the Vancouver Hotel which will be its headquarters during the meeting. Among the speakers will be Sir John Wm. Thomson-Walker, O.B.E., C.M., M.R.C.S., F.R.C.S., King's College Hospital, London, Eng.; Dr. E. J. Cotton, A.M., M.D., F.A.C.S., Boston City Hospital; Dr. Walter W. Chipman, B.A., M.D., LL.D., F.A.C.S., McGill University; Dr. L. G. Rowntree, M.D., D.Sc., of Mayo Clinic; Dr. F. N. G. Starr, C.B., M.D., C.M., F.A.C.S., Toronto University; Professor S. Lyle Cummings, C.B., C.M.G., M.D., David Davies Professor of Tuberculosis, Cardiff, Wales; and many other men of equal eminence. In fact, the program is an unusually strong one.

The North Pacific Paediatric Association will meet the day preceding the main convention. As it is expected that a very large transient population will occupy the hotels during the time of this convention, it will be important for all who expect to attend this meeting to make their reservations early, by letter or wire, to the hotels which they intend to make their headquarters.

ANNUAL MEETING OF OREGON STATE MEDICAL SOCIETY

The annual meeting of Oregon State Medical Society will be held at Portland, May 28-29. This being the fiftieth anniversary of the organization of the society, the program and meetings will be featured as such. Dr. A. C. Kinney, the first president of the society, elected Sept. 2, 1874, is now president-elect. Of the sixteen physicians signing the constitution and by-laws, Dr. Kinney is the only member living at this time. In accepting the office of president-elect a year ago, he paid a splendid tribute to his early associates when he said, "I may now boast of an early activity in gathering together into a membership of the Oregon State Medical Association a bunch of men, every man of them a nobleman, each with an unquestioned medical pedigree, and not an inefficient practitioner among them. They were of God's own people—not one of them do I see today." In order to feature this annual meeting as a home-coming for the older physicians and former residents of the state, the program committee is planning to have, with the exception of possibly one or two, papers and addresses by Oregon physicians. Dr. Wm. Sharpe, of New York City, is to give two addresses on "Acute and Chronic Brain Injuries in Adults" and "Brain Injuries in Newborn Babies and Children." Dr. Wm. Kuykendall will give a paper on "Surgery Forty-five Years Ago and Now." Others on the program will be Drs. E. B. Pickel of Medford; J. A. Fulton of Astoria; C. J. Smith, W. T. Williamson, S. E. Josephi of Portland, and others.

The scientic programs will be held in the forenoons and afternoons of both days, the business meetings to be held at the morning sessions. There will be entertainment, as usual, for the visiting ladies. On Thursday evening a dinner dance will be given. The speakers at the banquet will take on a reminiscent tone and no doubt some of the older men of the profession will have their memories refreshed by the tributes paid to the physicians of the early day who worked so valiantly to make possible such a splendid society as they now have.

Plans are under way to accept the invitation of the Portland Railway Light & Power Co. to visit their new power plant on the upper Clackamas at the base of Mt. Jefferson. The company has very kindly offered to furnish free transportation and free lunch at the head works. This is planned for the day following the close of the scientific session. This will be an all-day trip and should prove a delightful relaxation after the scientific meetings.

On May 26 and 27, the two days preceding the meeting of the Oregon State Medical Society, the Alumni of the Medical School of the University of Oregon, will hold their annual meeting. It is planned to make this consist largely of clinics at the hospitals. The first day and a half will be given over to clinics. There will be two papers on original research work, one from Dr. H. H. Foskett and another from Prof. Haskins of the University. The afternoon and evening of one day will be devoted to some sort of social program with banquet. Some form of entertainment will be planned for the ladies. Fuller details will be given later.

UNIVERSITY EXTENSION MEDICAL LECTURES

The medical lectures of the University of Washington Extension Course will be delivered the week of July 14-19. There will be three lectures, as in past years. Sir John Herbert Parsons, of London, England, will head the course. He is a distinguished member of the British medical profession, who has had a long and interesting medical and scientific career. He has received numerous degrees from English institutions, and to him has been awarded many prizes for scientific work. He has published many works on diseases of the eye. While Sir John will give addresses on eye subjects, he will also discuss timely medical topics, as he is a scholarly author on many subjects aside from his special line of work.

Medicine will be covered by Professor E. P. Joslin, of Harvard University, the foremost author in America on diabetes and diet in general conditions of disease. He will present the last word on insulin therapy, its possibilities and limitations. He will conduct a laboratory course, in conjunction with the home economics department of the University, illustrating in a practical way all that he has to say on dietetics, both in diabetes and in general pathologic conditions. Surgery will be presented by Professor John Osborn Polak, of the Long Island Medical School and Hospital. His lectures will include surgery in general, with obstetrics and gynecology in particular. He is one of the best known surgeons of the East, original in his methods and a distinguished teacher.

The committee in charge of these extension medical lectures has adopted the policy of limiting the membership in attendance, in order to maintain the individuality of the course. It is proposed to limit the number of tickets to three hundred. It is aimed to avoid the medical convention type of reading a mass of papers. It is desired to have the number in attendance of suitable size for round table discussions, so that members of the class may make the personal acquaintance of the distinguished lecturers of the course. Preference will be given to the physicians who have taken the course in previous years, who will have the opportunity of engaging their tickets until April 15. After this date they will be available in the order of application. The social features of the week will consist of the annual banquet Monday evening, alumni meetings on Tuesday evening, and on Thursday evening a mixer dinner at the Yacht Club. More details of the course will be presented in subsequent issues.

SUMMER MEDICAL MEETINGS

Comment has been made in the past on the multiplicity of medical meetings and the conclusion reached that, if one were to attend all that are scheduled for his attention, he would be such a busy man as to have little time left for private practice. In order that our readers may prepare their own itinerary for medical conferences we herewith present, in chronologic order, the meetings which will be offered for summer consumption in the Northwest.

The Oregon State Medical Society will meet in Portland, May 28-29. The Idaho Association is scheduled for Boise, June 20-21. Next in order is the Pacific Northwest Medical Association at Vancouver, June 26-28. The Montana Association mets at Helena, July 9-10. The University of Washington Extension Course will occupy the week of July 14-19. The Washington State Medical Association completes the program at its Everett meeting late in August. Other medical gatherings are listed to coincide with some mentioned above. Thus the North Pacific Pediatric Society will meet in Vancouver. The Alumni Association of the University of Oregon holds its annual meeting in connection with the state meeting at Portland. The Northwest section of the American College of Surgeons may hold its meetings at the time of one of the large meetings already mentioned.

OLD ACQUAINTANCE UNDER NEW NAME

Our contemporary, the *California State Journal of Medicine,* which has for many years greeted us under this title, has been changed to the concise and significant designation of *California and Western Medicine.* Combined with *Northwest Medicine* and *Southwestern Medicine* all the state medical journals of the Pacific Coast are now arrayed under the significant designation of *Medicine.*

MEDICAL NOTES

POSTGRADUATE CLINIC TOUR

Interstate Postgraduate Clinic Tour to Canada, British Isles, and Paris in 1925 is now being arranged under the supervision of the Managing-Director's office of the Tristate District Medical Association. The time for leaving will be about the middle of May.

The tour will consume approximately two months time and the total cost from Chicago and back to Chicago again will be less than $1,000.00. This will include all clinic arrangements and admissions and all traveling expenses, except meals on Pullmans in America and tips on the ocean steamer. First class hotels will be used everywhere and the ocean passage will be on the largest and finest of the new one cabin ships.

Clinics are being arranged in Dublin, Belfast, Liverpool, Manchester, Leeds, Edinburgh, Glasgow, Newcastle, London and Paris and other points of clinical interest. The clinics will be conducted by the leading clinicians of these cities. The opportunity will be given subsequently to visit the clinic centers in other parts of Europe.

This tour is open to members of the profession who are in good standing in their State or provincial Societies and their families and friends. Sightseeing programs will be arranged practically every day abroad, including the most scenic part of the countries visited, without extra cost.

On account of the great demand for reservations, applications should be made as early as possible to Dr. William B. Peck, Managing-Director, Freeport, Ill. Preference in the assignment of hotel and steamship accommodations will follow in order in which the applications are received.

Visit from Orthopedist. About the last of this month. Dr. W. R. MacAusland, one of the leading orthopedists of Boston, will visit the larger cities of the Pacific Northwest. He will deliver a lecture before several medical societies on "The Treatment of Ankylosis by Arthroplasty."

OREGON

Doctors Medical Building. Plans have been completed for the physicians and dentists office building in Portland, occupying half a block on Clark Street between Salmon and Main. It will be 100 by 200 feet in dimension, eight stories high, of reinforced concrete construction, costing approximately $900,000. It will be built by stock sold to subscribers among the doctors and dentists to about one-third the cost and a loan for the balance. Accommodations will be made for about two hundred twenty-five tenants. In the basement will be provision for parking one hundred cars.

Hospital Drive Planned. It has been proposed to concentrate all available efforts to pass the McNary and Watkins bills before Congress to appropriate $500,000 for a hospital in Portland for disabled veterans. Director-General Hines has stated that the peak has been reached of the veteran patients and that the load will continue to decline. Prominent doctors in Portland believe he is mistaken and that the maximum number of patients will continue for many years.

New Hospital to be Built. A group of physicians and laymen, of Albany, last month decided on the construction of a hospital in that city for the use of Albany and Linn County. A city block has been purchased for that purpose. It will cost $60,000 and will be a non-sectarian institution.

Staff of New Hospital. The new Pacific Christian hospital, at the University of Oregon, at Eugene, was opened March 10. Dr. Orville Waller was appointed chief of the medical staff. About eighteen physicians will be connected with the hospital. At present there is provision for one hundred patients, but there is space enough for one hundred more.

Eugene Hospital, at Eugene, is owned and operated by a staff of nine physicians. Dr. C. E. Hunt, recently from Grand Forks, N. D., has become associated with this hospital, in charge of obstetrcis and pediatrics.

Oregon Academy of Ophthalmology and Otolaryngology has elected the following officers for the ensuing year: President, Dr. George Ainslie, Portland; First Vice-Pres., Dr. L. O. Clement, Salem; Second Vice-Pres., Dr. H. M. Hendershott, Portland; Sec'y-Treas., Dr. A. J. Browning, M.D.

Non-Suits for Physicians. Last month a $20,000 damage suit was brought against Drs. L. B. Belknap and C. J. Sabin, of Portland, for treating a broken leg unskillfully. Judge Belt, of the Circuit Court, granted a non-suit.

Dr. M. L. Reid, who has practiced for the past four years in Portland, has located for practice in Oregon City.

Reappointed to Office. Dr. C. J. Smith, of Portland, was last month reappointed a member of the State Board of Curricula. His appointment is for five years. The doctor has served on this board since its creation.

Doctor Convicted. Dr. E. O. Wilson, of Elgin, was recently convicted of manslaughter by a jury after three days trial. The case was appealed to the supreme court.

Dr. V. Gefner, who has practiced for ten years in Portland, has located for practice at Arlington.

Medical Wedding. Dr. John A. Reuter, of The Dalles, was recently married to Miss Lydia Bottemiller, Superintendent of The Dalles hospital.

WASHINGTON

Office Building for Physicians. The Metropolitan Building Company, of Seattle, has started construction on the Stimson building, one block south of the Cobb building. This will occupy the block on Fourth Avenue opposite the new Olympic Hotel. It is built for the accommodation of physicians and dentists, and will contain two hundred offices with the latest specialized construction for these provisions. An underground corridor will connect it with the Cobb building. In the basement will be a large garage for automobiles.

Need of Cushman Hospital. While there has been much talk of abandoning Cushman Hospital, at Tacoma, investigation has shown that there is insufficient hospital accommodations for disabled veterans in the Northwest. It is stated that after patients have been transferred to the American Lake neuropsychiatric hospital from Steilacoom, Cushman and Boise, there will be room for only forty-three more patients. This will be insufficient to care for ninety-six more patients of that class remaining at Cushman. It seems that there is a necessity for the continued maintainance of this institution.

Hospital Reconstruction Completed. Reconstruction work on the Northern Pacific hospital, at Tacoma, has been completed at a cost of $120,000. It is now said to be one of the best equipped institutions in the West. All departments have been refitted in the most modern manner. It has been stated that the hospital handled six hundred patients during January.

New Hospital Opened. The new General Hospital of Everett was opened for patients last month. It has been constructed at a cost of $300,000, is three stories high, of reinforced concrete and brick construction. Adjacent to the hospital is the new Jordan Home for nurses. The two buildings combine a perfect equipment for an up-to-date, complete hospital.

New Hospital Planned. The Norwegian Hospital, of Seattle, has existed under that name for the past year and a half, having acquired the old North End Hospital. It is proposed to erect a new building on the hospital property, the first unit of which will be built sometime during the coming year. It will be known as the Norwegian Memorial Hospital.

Hospital Nears Completion. The new St. Peters hospital, at Olympia, is ninety per cent completed and will be ready for patients in about two months. It is a five story, reinforced concrete building, to accommodate about three hundred patients, and will cost about $450,000. It will be modern and complete in every respect, with all the latest provisions of hospital construction.

Isolation Hospital Needed. The commissioners of Pacific County recognize the need of an isolation hospital for diseases necessitating quarantine. It has been proposed that property for such a hospital should be procured in the suburbs of South Bend.

New Commissioner of Health. Dr. George N. McLauglin was last month appointed commissioner of health, for Seattle, by Mayor Brown, to succeed Dr. H. M. Read, resigned. The term of appointment is for four years, in order to equalize the regular schedule for the legal five year appointment. Dr. McLaughlin is a native of Nashville, Tenn., and has practiced in Seattle for twenty years.

Washington State Public Health Nurses Organization held a meeting in Tacoma, March 22. Papers on several subjects were read with subsequent discussion.

Director of Laboratory. Dr. P. A. Scott, recently connected with St. Lukes hospital, in Chicago, has been appointed director of the department of pathology at the Tacoma General Hospital.

Snohomish County Medical Society held a meeting at Everett, March 4. Papers were read by Drs. N. L. Thompson and B. E. Washburn.

Dr. C. E. McKinnis, formerly of Blaine, has located for practice at Bellingham. For a number of years he has been medical inspector for the immigration service at Blaine.

Dr. F. C. Parrott, recently of Sabine, Texas, has located for practice at Longview.

IDAHO

State Examining Board. Commissioner of Law Enforcement last month announced the following as members of the state medical examining board: Drs. A. M. Newton, Pocatello; L. W. Chilton, Nampa; C. R. Scott, Twin Falls; F. A. Pittenger, J. R. Numbers, and George Collister, Boise. An examination was held by the board April 1.

Quarantine Rules to be Enforced. Last month Dr. F. W. Almond, director of public health service, gave out notice that nobody has legal authority to issue a permit for school attendance for a child from a home where contagious disease existed. Quotations were made from the Idaho statutes which cover this question in detail.

Idaho Association for Graduate Nurses held its annual meeting at Boise, March 4, with more than forty nurses in attendance from that part of the state. There were discussions of the work of the organization, and addresses on health educational work. Officers were elected for the ensuing year.

Complications in Hospital Site. The legislature of 1923 appropriated $4,000 for the purchase of a site for a tuberculosis hospital at Payette. The Attorney-General does not approve of paying the claim on account of a $900 lien for irrigation. The Governor has suggested that $3,100 be accepted with the assurance that the legislature will provide for the balance at its next session.

Delano Foundation Nurse. The Jane Delano foundation was provided by a nurse of that name, who died in war service in France, in 1918. The money is used for the employment of nurses in public health work in sparsely settled regions. Four such nurses are now employed in the United States, one being in Alaska. Miss Janette Worden has been allotted to Idaho for this purpose.

Physicians for Hospital. Dr. R. G. Nelson, recently of Spokane, has located at Spirit Lake, where he has taken charge of the Spirit Lake hospital. He has appointed a consulting staff of several wellknown Spokane physicians.

Dr. R. T. Hopkins, recently of Seattle, has located at Elk River, where he will have charge of the hospital. Dr. J. P. Weber, who has recently held this position, has moved to Bolville, where he will engage in hospital work.

Dr R. G. Eaton, last fall appointed superintendent of the insane asylum at Blackfoot, has resigned from that position.

MONTANA

Deer Lodge County Medical Society held its annual meetng, March 8, at Anaconda. Dr. Oliver Leiser was elected president for the ensuing year and Dr R. C. Hall, secretary. It was decided in the future to hold meetings the second Saturday of each month.

Vaccination Case Appealed. Last month the county attorney, at Butte, acting on the advice of Attorney-General Rankins, appealed to the Supreme Court the vaccination case decided by Judge Carrol several months ago. In this case the objectors to the vaccination obtained a restraining order against the state board of health enforcing vaccination of the school children in Butte and vicinity.

Object to Hospital Site. The commissioners of Great Falls have proposed to establish a new city-county detention hospital at Commercial Avenue and Second Street, as the present building is inadequate for hospital needs. As is usual under these circumstances, property owners have brought an injunction suit to prevent the purchase of this property for that purpose. It is said that the site is an ideal one for this hospital and will be of great service to the city.

Visiting Nurse Engaged. According to the committee in charge the sale of tuberculous seals at Livingston, two-thirds of the money received from the sale is to be used for the employment of a visiting nurse. She will conduct classes under the auspices of the Red Cross, and acts as visiting nurse for Livingston and vicinity.

Dr. E. M. Burke, recently of Malta, has located for practice at Havre.

OBITUARIES

Dr. Fred G. Hewitt, of Independence, Ore., died March 16, from an attack of apoplexy. He had just recovered from an attack of pneumonia He was born in Kansas in 1877. While a small boy his parents settled near Salem, later moving to the vicinity of Long Creek. At one time he edited a newspaper at Ukiah. Later he entered Willamette University and graduated from its medical department in 1907. He practiced in Eastern Oregon until 1913, when he located in Yoncalla. In 1915 he moved to Independence. During the war he served as First Lieutenant at Camp Lewis. He took an active part in community affairs.

Duncan Mac T. Fuller, of Seattle, Wash., died Mar. 15 after a ten days illness at 31 years of age. He was born in New York City. After preparatory work at Hill School, he graduated from Yale Sheffield Scientific School in 1913. He received the degree of M. D. from College of Physicians and Surgeons, Columbia University in 1917. As a member of Troop A, Squadron A, he spent eight months on the Mexican border. He served as interne at Presbyterian Hospital, New York, till 1918. As First Lieutenant in the Medical Reserve Corps he was attached to Base Hospital Unit No. 50 at time of the armistice. For six months he served on the house staff of Roosevelt Hospital. After a period of travel he was appointed for a year as instructor in surgery at Columbia University. In 1922 he located in Seattle. He was skillful in practice and possessed lovable qualities so that he gained the affection and admiration of all with whom he was associated, both doctors and patients.

Dr. Ivan A. Perry, of Seattle, Wash., died March 18, while en route to Auckland, New Zealand. He was on a pleasure trip with Seattle friends to Australia. He was forty-seven years old. He was born at Mankato, Minn. After studying in schools of that town he graduated from the University of Minnesota, where he also obtained his medical education. He has practiced in Seattle for twenty years. He was one of the well-known physicians of that city, prominent in social life as well as medical circles.

Dr. Colin Gilchrist, of Wenatchee, Wash., died March 20, from pneumonia following an operation for appendicitis. He was sixty-three years of age. He was a native of Ontario, Canada, and graduated in medicine from the University of Detroit. In 1889 he settled for practice at Waterville. In 1897 he moved to Wenatchee, where he practiced until his death. He was the first physician in that section of the state and established the first hospital in Wenatchee. He took a prominent part in public affairs of that city. At one time he served as coroner and as president of the school board.

Dr. J. K. Locke, of Portland, Ore., died March 14, from an illness resulting from injuries sustained in an automobile accident two years ago. He was born in Independence. He attended the Oregon Agricultural College. He graduated from medicine in 1889, from Washington University in St. Louis. He settled for practice in Portland in 1892. Until the time of the automobile accident he had an active practice and was widely known in medical and club circles. At one time he was a member of the Oregon state medical examining board.

Dr. Cecil G. Moorehouse, of Everett, Wash., died March 11. During the night, while answering an emergency call, driving in the fog, he crashed into a house which was in the process of moving along the street. He was almost instantly killed by the impact. He was 35 years of age. He was born in Iowa and came to Everett shortly after the world war in which he saw service.

Dr. Carl W. Weisman, of Spokane, Wash., died Feb. 25, from pernicious anemia. He was 45 years of age. He was born in Ohio, and graduated in medicine from the University of Michigan. He located for practice in Spokane in 1904. For twenty years he was on the staff of St. Lukes hospital and was also connected with other hospitals. He was formerly president of the Spokane County medical society.

Dr. John B. Coburn died in Seattle, Wash., Feb. 23, from cerebral hemorrhage, while eating dinner. He was 64 years of age and was born in Scotland. He practiced in Chicago for thirty years and moved to Seattle about six years ago. He was in apparent good health until his death.

Dr. Wellington Boyd, of Portland, Ore., died Feb. 28, after a long illness. He was 76 years of age. He was born in New York and moved to Oregon in 1871. For more than fifty years he practiced in Oregon and was one of the pioneers of the staff of St. Vincents hospital.

Dr. D. E. Biggs died at Bandon, Ore., Feb. 24. He was born near Cincinnati, Ohio. He located at Bellingham, Wash., in 1889, where he was for many years a wellknown physician and surgeon. He has been in poor health for three years.

Dr. E. O. Dutro died at Hoods River, Oregon, March 11, of internal hemorrhage. He was fifty-four years of age. He had practiced also in other cities in that part of the state.

REPORTS OF SOCIETY MEETINGS

OREGON

PORTLAND CITY AND COUNTY MEDICAL SOCIETY

Pres., C. S. White; Sect'y, K. P. Moran

The regular meeting of the Portland City and County Medical Society was held in Portland, March 5.

Dr. Earl Else gave an extensive discussion of toxic goiter. Dr. E. A. Pearce discussed the free dispensary.

There was discussion of the proposed medical building for physicians and dentists. The plan presented was for a corporation to be formed by physicians and dentists to control the ownership and management of the building. It is proposed to raise about one-third of the cost of construction by subscription and the balance to be borrowed. The plan provides that the debt be paid off in a little over ten years.

POLK-YAMHILL-MARION MEDICAL SOCIETY

Pres., J. C. Bellinger; Secty., D. R. Ross

The Polk-Yamhill-Marion Medical Society met at the Gray-Belle, Salem, Ore., March 18, at 7 p. m. Dinner was served. In the absence of the President the meeting was called to order by the Vice-president, Dr. W. Carlton Smith.

The following members were present: J. R. Barr, F. H. Bowersox, W. H. Byrd, P. W. Byrd, L. O. Clement, C. A. Downs, R. L. Edwards, J. C. Evans, E. E. Fisher, L. F. Griffith, R. E. Kleinsorge, P. A. Loar, J. O. Matthis, W. B. Morse, J. R. Pemberton, Mary B. Purvine, D. R. Ross, Mary C. Rowland, Edward Schoor, W. C. Smith, H. W. Steelhammer, F. H. Thompson, R. L. Wood, J. O. Van Winkle.

Visitors present were: Drs. Wm. H. Dale and A. H. Ross, Eugene; Dr. E. H. Hobson, Salem; Dr. Burton of the Indian Service; Dr. A. R. Sargeant, Sheridan; Dr. Donahue of Eugene and Frank S. Ward, Ex. Sec. Public Health League.

Dr. J. O. Matthis called to the attention of the Society the recent death of Dr. F. G. Hewitt of Independence. The president appointed Drs. J. O.

Matthis, G. C. Knott and W. B. Morse as a committee to draft resolutions.

Dr. A. H. Ross gave a paper on "Disease of the Thoracic Aorta" with lantern slides, showing aortic aneurism. Discussion led by Dr. J. C. Evans. Dr. Evans exhibited a case of aortic aneurism.

Dr. Wm. H. Dale gave a paper on "Cancer Control Movement with Special Reference to Cancer of the Cervix and Uterus." Discussion by Drs. Byrd, Morse and Fisher.

Frank S. Ward, Executive Secretary of the Oregon Public Health League, gave a short talk explaining what the League hoped to accomplish and asked for the cooperation of the physicians.

The committee, which was appointed at the last meeting to draw up resolutions relative to the work in the profession and medical society of the late Dr. Southworth, submitted the following resolutions·

Whereas, Death has removed from our Society one of its honored and valued members, Dr. C. W. Southworth, and

Whereas, we feel the loss keenly and deeply regret his passing, therefore be it

Resolved, that we have recognized and appreciated his loyalty to the highest intellectual and ethical standards of our profession as well as his conscientious, effectual and untiring devotion to the welfare of the sick, and further be it

Resolved, that the Polk-Yamhill-Marion Medical Society realizes the loss to our city and state in the death of Dr. Southworth and that we extend our sincere sympathy and condolences to his family in this hour of their great sorrow, and that we recommend them to Him who is the Author and Finisher of our faith, for sustenance and comfort. Be it further

Resolved, that a copy of these resolutions be sent to the bereaved family, one sent to the press and one spread upon the minutes of this society.

E. E. Fisher, M.D.
H. J. Clements, M.D.
Chester A. Downs, M.D.

CLATSOP COUNTY MEDICAL SOCIETY

Pres., M. H. Smith; Secty., A. G. Allen

A meeting of Clatsop County Medical Society was held at Astoria, Ore., on the evening of March 25. Dr. Arthur Van Dusen, of Astoria, was elected President and Dr. E. N. Neuley, of Astoria, Secretary, for 1924.

Following a dinner, addresses were delivered by Drs. E. B. McDaniel, F. D. Stricker, C. S. White and L .C. Booth of Portland, on work of the State Medical Society, Public Health League and other organizations.

WASHINGTON

KING COUNTY MEDICAL SOCIETY

Pres., F. T. Maxson; Sec., J. S. Lundy

A general meeting of King County Medical Society was held at Seattle, Wash., Mar. 3, 1924, Dr. F. T. Maxson presiding. The minutes of Jan. meeting were read and approved.

Application of Drs. S. Harmon and Minnie Burdon were read.

A letter from Dr. W. F. West, President State Medical Association, was read. It was voted that the society go on record as favoring the policies embodied in the above-mentioned letter.

Dr. C. E. Watts was elected Secretary-Treasurer by a unanimous vote to take office March 15, and to finish the term of the present Secretary.

Dr. H. V. Wurdeman read a paper entitled, "Ocular Manifestation of Cardiorenal Disease," illustrated by water color paintings of retinae in cases of the above mentioned disease.

In discussion Dr. G. W. Swift spoke of textbooks featuring Dr. Wurdemann's drawings. Cases of pregnancy with this condition often live for a longer time than the usual period given in the prognosis. Dr. O. J. West thought it essentially a toxic substance which causes the disease by special affinity for nerve tissue. Dr. N. D. Pontius mentioned the sudden onset of eye symptoms in pregnancy cases. It is in the young toxic cases that ocular function is most disturbed. Dr. L. J. Palmer, based principally on blood chemistry, said that a food giving a low acid residue helps these patients. Dr. C. E. Watts spoke of diet and how a plan for home management of it was practiced. Dr. R. E. Allen said the ocular findings are a good guide as to the time to interrupt pregnancy in toxemia.

SPOKANE COUNTY MEDICAL SOCIETY

Pres., C. E. Butts; Sec., G. H. Anderson

The regular monthly clinical meeting of the Spokane County Medical Society was held Feb. 28, at 8 p. m. in the Deaconess hospital.

Dr. Doland, as a member of the Board of Censors, reported that the charges against Dr. Frank Rose were sustained.

Dr. Eikenbary reported a case of paralysis of the lower extremities with contractures secondary to infantile paralysis. He emphasized the importance of preventing contractures.

Dr. Hageman showed a case of abdominal injury with ruptured liver, tear in the pancreas and a fistula draining pancreatic juice. Discussed by Dr. Butts, Downs and Welty.

Dr. Epplen demonstrated a case of pernicious anemia and a case of pulsus alternans in a patient with cerebral spinal lues, chronic nephritis with hypertension and cardiac decompensation.

A motion was made by Dr. Hamblen that resolutions of condolences be drawn up and sent to Mrs. Weisman. Carried. The president appointed Drs. Eppeln and Eikenbary to draw up the resolutions.

The regular meeting of the society was held in the assembly room of the Old National Bank Building, March 13, at 8 p. m. The minutes of the previous meeting were read and approved.

Dr. Harry Rhodehamel was unanimously elected to fill the vacancy on the Board of Censors made by the death of Dr. Weisman.

Dr. Armin Fischer reported that the auditing committee found the treasurer's books in good order. The society accepted the report.

Dr. Herpel gave a paper entitled "Roentgenologic Examination of the Chest. The Pathology of Pulmonary Tuberculosis and its Roentgenologic Interpretation." Discussed by Drs. Ward and Butts.

Dr. R. C. Andres gave a paper entitled "The Treatment of Malignancy of the Mouth."

The resignation of Dr. Frank Rose was accepted.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

Pres., J. T. Dowling; Secty., M. J. Morriss

The Puget Sound Academy of Ophtalmology and Oto-Laryngology met in Seattle, March 18, at the Virginia Mason Hospital, Dr. J. T. Dowling, President, presiding.

Dr. R. W. Perry presented a clinical case of intermittent swelling of the orbital tissues of the right eye of vascular origin.

The scientific paper of the evening was read by Dr. A. T. Wanamaker, "Complications of Middle Ear and Mastoid Suppuration." The paper was discussed by Drs. Hyde and Chase.

Dr. Will Otto Bell told of his work in European Clinics during the past year. His talk gave accurate information regarding the status of the clinics of Rome, Vienna, Budapest, Berlin, Paris and London and the work being done in each.

Dr. Leland Bull was elected to membership in the Academy.

PUBLIC HEALTH LEAGUES

WASHINGTON

THE CONTACT COMMITTEE

Under the Washington "plan" which is unique in health organization, there is provided, by resolution of the Washington State Medical Association, a Contact Committee consisting of eight chairmen with their assistants. This committee is the means of direct contact between the medical organization and the Public Health League. It has the power to collect data on health issues, to devise methods of health import and to function in the direction of coordinating health activities. The present Contact Committee consists of the Chairmen of the following committees of the Washington State Medical Association: Child Welfare, Conservation of Vision, Cancer, Social Hygiene, Mental Hygiene, Industry Health Problems, Hospital Standardization. Public School Health, Tuberculosis and Higher Education Health.

The Contact Committee met in regular session in Seattle March 9 and decided to ask each medical society in the state to give one evening to reports from members of these committes. It was thought that the average practitioner is unaware of the work being done by the Contact Committee and that more individual support was needed if the committee were to operate to the best advantage. The secretary of the League, who is also the same official for the Contact Committee, was instructed to correspond with the various societies, asking that the committee work of this important organization be given an inning in the near future.

As a further measure of professional education as to the work and function of the Contact Committee, the May first issue of the MESSENGER will be a special "contact" number, containing an article by Dr. W. D. Read, of Tacoma, former president of the Washington State Medical Association, and reputed to be the father of the contact idea. Other data will be presented, showing the function of the committee and the big part it plays in the health work of Washington.

ANOTHER ISSUE FOR THE LAITY

The League issued its second lay edition of the MESSENGER on April first, which goes not only to physicians and dentists, but to the lay members of the organization. As a part of the educational propoganda of the League, a copy of this number goes to every member of the Washington leisglature, mayors of cities, editors of newspapers, parent-teacher officials and other prominent citizens of the state.

Leading articles are given by Dr. H. J. Davidson, on "Instruments of Precision;" Dr. Frederick Epplen, on "Your Physician and Your Cold;" Dr. Edwin W. Janes, on "Fishing for Health;" Dr. H. H. Skinner on "A Fly Fable;" and Dr. Hamilton Stillson, on "Angels and Babies." Dr. William McGovern wrote a special article on painless dentistry, while Mrs. Elizabeth Soule, head of the department of nursing of the University of Washington, and Lelia W. Hunt, head of the nutrition department of the State College of Washington had timely articles covering their respective fields.

THE WASHINGTON HEALTH BUILDER

The little booklet of health, named The Washington Health Builder, with its twelve articles on health, has found a ready response thruout the state. A large number of physicians are asking for additional copies. Health officials are also using thousands of them. School teachers have found them valuable in their districts. A number have written to the League office, asking for enough to give every school mother a copy. This publicity effort, made possible thru the cooperation of the Metropolitan Life Insurance company, is proving to be a big item in the League campaign of education.

IDAHO

DOCTORS BACK UP HYGEIA

If laymen were better in the ways of living a healthful life, there would be far less disease and suffering among the American families. This was brought out very forcibly at a meeting of the Canyon County Medical Society on March 19. Many of the epidemics which strike different sections of the county could be checked, if the physician could secure the cooperation of the people. With a view to bringing this about, medical men of Canyon County have started an extensive campaign to introduce the magazine Hygeia in the schools, the public libraries and the homes in all of the outlying districts. This is a step in a new direction and will be watched with a good deal of interest.

STATE MEETING

The League will meet in Boise on June 21. Further announcements and program will be given later.

SERVICE RECORD

An organization like the League is broad and, while it is believed by many to be the only way out for certain difficulties, some non-believers frequently ask, "What has the League done for me?" There is one good western reply to that question, "What have you done for the League?" The accomplishments of the League are too numerous to mention in this short article. Many persons have received benefits that they were not entitled to because they hold back and criticize instead of pushing and helping. Any person gets out of any organization just what he puts into it—will, energy and money. The only answer that can be given is, "What have you done for the organization."

MONTANA

SHEPPARD-TOWNER WORK IN MONTANA*

Hazel D. Bonness, M. D.
HELENA, MONT.

With the acceptance in Montana, first by the governor, and later by the legislature of the provisions of the Sheppard-Towner Act, the carrying out of this act was placed with the Child Welfare Division of the State Board of Health. This division has two advisory committees. One is composed of a group of women, representing all organizations interested in child welfare and one is a medical committee, consisting of three physicians appointed by the State Medical Association. These committees act in an advisory capacity and they have also been extremely helpful in public speaking on Sheppard-Towner subjects.

The development of maternity and infancy work in Montana has been handicapped by the lack of county nurses. This has meant that a large share of the work has had to consist of itinerant health conferences and clinics carried on by the field staff with the aid of local health officers and physicians and without any follow-up work. Because of this handicap and also because of a lack of sufficient funds the Child Welfare Division of the Board of Health has entered into close affiliation and cooperation with the Montana Tuberculosis Association and with the American Red Cross.

With the Montana Tuberculosis Association we are cooperating in the maintenance of our field staff, which has resulted in the saving of traveling expenses and an increased amount of work accomplished. The Board of Health carries three-fourths of the expenses and the Tuberculosis Association one-fourth. Four staff nurses are maintained and the state is apportioned for convenience into four sections, with one nurse assigned to each section. The staff nurse works within her own territory, carrying itinerant clinics and mother and baby health conferences for the State Board of Health and doing a limited amount of school work for the Montana Tuberculosis Association.

The Red Cross, the Montana Tuberculosis Association and the State Board of Health all unite in promoting what is termed joint county nursing services. In this arrangement the above organizations usually pay the salary and a part of the expense of the public health nurse, the county generally paying the greater part of the traveling expenses. After a year or two of this arrangement in a county, it is expected that the county itself will assume the complete expense of the nursing service.

During the period from January 1 to December 31, 1923, the field staff held conferences in forty-six counties. In addition the Child Welfare Division of the Board of Health has assisted in maintaining a county nursing service in five counties. The following is a brief summary of work accomplished:

Children's health conferences held by field staff	262
Children's health conferences held by county staff	87
Number of babies and pre-school age children examined by field staff	4067
Number of babies and pre-school age children examined by county staff	1116
Number of school children examined by physisicians, assisted by the field staff (credit to Board of Health as this work was done prior to arrangement with Tuberculosis Association)	813
Children weighed and measured by field staff	1228
Lectures given by the field staff on maternity and infancy subjects	242
School talks given by field staff	106
Demonstrations on home care of the sick, baby layettes, maternity packs, etc.	132

Prenatal conferences have been held by the field staff in conjunction with the baby conferences. It was found very difficult to hold prenatal conferences in rural districts unless this combination was made.

During the summer months a special educational campaign was carried on thru state, county and community fairs. Some fourteen fairs were covered in this way with a staff nurse in attendance, and exhibits, films and lantern slides were supplied. In addition, where physical conditions permitted, child welfare conferences were also conducted.

The office work has consisted of the usual routine, with the addition of some new phases of work, A considerable amount of new material has been prepared for distribution, among which is a series of diet cards for children of various ages, which have proved very popular, a series of ten posters,

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*From the Yearly Activities Report of the Child Welfare Division, Montana State Board of Health

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printed on inexpensive paper, for use in exhibits and score cards for clinic use. About forty thousand pieces of literature have been distributed during the past year by the Child Welfare Division.

This division maintains a film library, consisting of ten public health films which are in constant use thruout the state. We have prepared and distributed a series of twelve traveling libraries which are sent to various communities for periods varying from three to six months. These libraries have been constantly in the field from the beginning.

The Child Welfare Division has undertaken the compilation and codification of the laws of Montana pertaining to children. This work will be published early in the spring. The division has also cooperated with the Vital Statistics Division of the Board of Health and with the hygienic laboratory which latter has meant the employment of a laboratory technician for Wassermann work.

The work, during the past six months, we find to have been practically twice as much as during the first six months of the year. This, of course, has been accompanied by an increased demand for literature and for our field work. We have at every turn received the very hearty cooperation of lay people and the very cordial support of the physicians of Montana who have been exceedingly generous in giving their services to the itinerant health conferences.

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Operative Surgery. Covering the Operating Technic involved in the operations of general and special surgery. By Warren Stone Bickham, M.D., F.A. C.S., Former Surgeon in charge of General Surgery, Manhattan State Hospital, New York. Former Visiting Surgeon to Charity and to Touro Hospitals, New Oreleans. In six octavo volumes totaling approximately 5400 pages with 6378 illustrations, mostly original and separate Desk Index volume. Now ready—Volume I containing 850 pages with 921 illustrations. Volume II containing 877 pages with 1008 illustrations. Volume III containing 1001 pages with 1249 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 per volume. Sold by subscription only. Index Volume Free.

This system is the outgrowth of the author's "Text Book of Operative Surgery," a one-volume work, modern and authoritative. The first three volumes only have reached the reviewer and make at once an impression that is more than favorable. The task of such an undertaking by one man, without other collaborators than the artists, is easy to comprehend and the production of each volume calls for an admiration not exceeded by those of any similar system. The author's interpretation of what is operative surgery finds expression everywhere in the work and removes it from the realm of a compilation of technical procedures to that of a place where rich advice, based on almost unequalled personal experience, abounds thruout. The operations are, of course, described with much detail and with abundant and original illustrations.

The first volume contains chapters on many phases of general surgery and we find in them comments on the surgeon himself, the preparation of the patient, details of operating room technic, anesthesia and aftercare of patients, all of unusual value and not to be found so briefly and so effectively expressed elsewhere. Fundamental principles of operations on the different tissues are appropriately stressed, and condensed outlines of the surgical anatomy are included. Subsequent chapters are on general operative surgery, as are those of the second and third volumes. The last three volumes will be on special operative surgery. While the first three volumes are largely devoted to the fields commonly referred to as "special," the last three will deal with operations more familiar to the general surgeon. It is not too much to predict, however, that this system will take its place at once at the head of those devoted to the operations of surgery.

FORBES.

Methods in Medicine. The Manual of the Medical Service of George Dock, M.D., Sc. D. Formerly Professor of Medicine, Washington University School of Medicine, St. Louis, etc. By George R. Herrmann, M.D., Ph. D., Instructor in Medicine, University of Michigan, etc. Cloth, 521 pp. $6.50. Illustrated. C. V. Mosby Co., St. Louis, 1924.

This book is founded on the long experience of that distinguished clinician, George Dock, in the Barnes hospital, and is a treatise on the necessary organization and duties of the personnel of a large medical hospital in the systematic, routine methods of examination, diagnosis and treatment of patients. In it are to be found also reproductions of all the record sheets employed in the various departments, a description of all laboratory and x-ray procedures, together with administration methods, rules and regulations for the management of the hospital and conduct of the staff. The object of the book is "to assist members of house staffs in the various duties assigned them, so that they may use their time and material most economically." In brief, it is a complete guide to the best scientific management of a medical hospital. No better book could be used in formulating the medical organization and management of such hospitals in any of our cities.

The author has also introduced methods borrowed from his experience under Christian in the Peter Bent Bingham Hospital. It is interesting to note that the phthalein test is done as a routine on every patient, which appeals strongly to the reviewer; that blood pressures are taken frequently in typhoids, when there is a suspicion of hemorrhage or perforation; that blood examinations are made in jaundice cases to distinguish obstructive from hemolytic cases. The routine examinations for various other classes of patients are very valuable, as gastric analyses in all anemias, pulse tracings where alternating pulse may exist, etc. These rules for internes for routine

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examinations are most important and save the visiting men much time and labor.

Routine treatment in all the more common classes of patients is laid down and there is an interesting discussion of Dock's twenty drugs. The beneficient effect of bromides in quieting the nervous excitability of an hysterical family, following the death of a relative, is an almost amusing commentary on hospital calamities.

The book closes with reproductions of charts and clinical record sheets used in the hospital, occupying about 75 pages. It is a very timely and valuable summary of the best methods to be followed in the scientific routine management of medical patients in hospital practice and cannot be too warmly commended.

WINSLOW.

A Text-book of Anatomy and Physiology. By Jesse F. Williams, M.D., Professor of Physical Education, Teachers College, Columbia University, New York City. 12mo of 532 pages with 369 Illustrations. Philadelphia and London. W. B. Saunders Company, 1923. Cloth $3.00 net.

This excellent publication contains the principles of anatomy and physiology in a condensed form, which should prove most useful for the groups of students for whom it is intended. Its value is found in the arrangement of the subject matter, the teaching helps employed, and the number and quality of the illustrations. At the end of each chapter is found a series of practical exercises, groups of questions and selected references, which should serve to fix the principles in the preceding text. The book is not intended for medical students, but for other students of anatomy and physiology. Chapters are devoted to embryology, skeleton, nervous, circulatory, respiratory, digestive, excretory and reproductive systems. The physiology of these different systems is considered in relation to their anatomy. This is one of the best volumes on these combined subjects.

SMITH.

Intranasal Surgery. By Fred J. Pratt, M. D., and John A. Pratt, M. D., Assistant Professors Eye, Ear, Nose and Throat, Medical School, University of Minnesota. Illustrated with 195 half-tone engravings. 334 pp. $5.00. F. A. Davis Company, Philadelphia, 1924.

This volume departs from the usual text on this subject as much as the style. It is simple, brief and concise. The illustrations are original, anatomically correct and systematically used. Standard operations are described and detailed. The technic of many of the operations differ from the usual descriptions and are original with the authors. Taken as a whole, this production stands out by itself, and should appeal to the student and rhinologist alike as an everyday working manual.

CHASE.

The Antidiabetic Functions of the Pancreas and the Successful Isolation of the Antidiabetic Hormone-Insulin. By J. J. R. MacLeod, Professor of Physiology, University of Toronto and F. G. Banting, Research Professor of Toronto. 69 pp. $1.50. C. V. Mosby Company, St. Louis. 1924.

This monograph comprises the second series of the Wayne County Medical Society Beaumont Foundation Lectures, of Detroit. The authors have recorded the historical events in our knowledge of the pancreas and tell the story of the discovery and isolation of insulin and its employment in the treatment of diabetes mellitus. A special interest is attached to these subjects, since they are presented by men whose names will be forever linked with our knowledge relating to them.

Physical Examination and Diagnostic Anatomy. By Charles B. Slade, M.D., formerly Chief of Clinic in General Medicine, University and Bellevue Medical School. Third Edition, thoroughly revised. 12mo of 179 pages illustrated. Philadelphia and London: W. B. Saunders Company, Cloth, $2.00 net.

This book deals with physical examination but not physical diagnosis, as stated by the author. The principles of such examination are presented, while the diagnosis of specific disease is avoided. General rules are presented for customary physical examinations, special attention being devoted to surface marks for the topography of the various organs and anatomic features. Principles are outlined for the recognition of pulmonary and cardiac sounds and the abdominal organs by palpation, inspection, etc. It is a valuable monograph.

The Dietary of Health and Disease. For the use of Dietitians, Nurses and Instructors in the Sciences that Pertain to Nutrition. By Gertrude I. Thomas, Instructor in Dietetics, University of Minnesota. Illustrated. 210 pp. $2.25. Lea & Febiger, Philadelphia and New York. 1923.

The author states that the purpose of this book is to provide an intermediate text as a basis for instruction in schools of nursing or departments of home economics. There are chapters on the relation of food to the human body and the processes by which the latter make use of food. After discussing the various kinds of foods and their preparation, chapters are devoted to specific items of food with many recipes and descriptions for their cooking. There is a chapter on diet in various diseases.

Dosage and Solutions. A Text-Book for Nurses and a Reference Book for Physicians and Nurses. By C. E. Garnsey, Instructor in Anatomy, Physiology, etc., in the Washington, D. C., Sanitarium and Training School for Nurses. 111 pp. W. B. Saunders Company, Philadelphia and London. 1924.

This little volume is one of the most useful published on the subject of dosage of drugs. It is compact and concise, in a few words presenting the principles of prescription writing, the problems of dosage and the methods of their administration. It will prove useful not only to nurses but to physicians whose minds are not clear on the subject of prescription writing.

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ORIGINAL CONTRIBUTIONS

DIAGNOSIS OF SOME PARASITIC DISEASES OF THE SKIN *

Oliver S. Ormsby, M.D.

CHICAGO, ILL.

Cutaneous diseases as a whole are particularly abhorent to the laiety. It is not uncommon for a patient to remark that the presence of a skin disease is considered a blot on its possessor. This unusual attitude is likely developed on account of the supposed contagious nature of cutaneous diseases, together with a traditional abhorence of leprosy, which is a disease with marked skin manifestations. The laymen's conception of leprosy is that it is a very contagious disease and that it may be contracted by the slightest contact. This idea has been emphasized by lay writers for a long period of time. As a matter of fact, leprosy is only slightly contagious and the other parasitic diseases, which are contagious, aside from syphilis, are few and simple in this country. We shall consider scabies, grain itch, impetigo and ringworm in its various types, together with the disorders with which they may be confused.

Scabies is by far the most important member of this group and is now enjoying an unusual run. It is a matter of record that when large numbers of people congregate for sometime, scabies gains victims. In this country a marked increase occurred in the civil population following the Revolutionary, Civil and lastly the World War. This disease with its complicating pyodermias presented a great problem during the recent war and since then the disease has been prevalent thruout this country.

From the standpoint of the general practitioner the two difficulties we have noted are, first, a frequent doubt as to the diagnosis; and, second, overtreatment of recognized and unrecognized cases. If the causative parasite is demonstrated in every case, the first difficulty is overcome and this should be a rule invariably carried out. The second difficulty is readily overcome by becoming familiar with the possibilities. Ordinarily these patients present lesions on the hands, between the fingers, on the wrists, about the axillae, on the breasts in women, buttocks in children and the genital region in males.

In order of importance the lesions consist of the following: Furrows or galleries, vesicles, and after these pustules, crusts, excoriations and other evidences of traumatic dermatitis. In old cases, particularly those only partly treated, rather deep nodules sometimes are formed on the scrotum, about the elbows and buttocks. We have seen lesions that remained over a period of several months and from these have obtained the parasite without difficulty. In people unusually clean the number of lesions may be small and their distribution varied. The subjective

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* Read before the Second Annual Meeting of Pacific Northwest Medical Association, Seattle, Wash., June 19-21, 1923.

symptoms in all consists of intense itching after retiring and getting warm in bed.

Diagnosis. The important features are the regional distribution of lesions above mentioned and the lesions described. The finding of a gallery and its removal with a sharp scalpel and the examination of this material, revealing the parasite, settles the diagnosis. The condition is largely to be distinguished from pruritus hiemalis, essential pruritus, pediculosis and grain itch.

In pruritus hiemalis the sites of predilection are the legs, thighs and forearms, and rarely the entire surface. The lesions found are those induced by scratching a dry skin. Itching occurs while the patient is disrobing, in place of after retiring as in scabies. The absence of furows and vesicles and the regional distribution distinguishes this disorder from scabies.

In pediculosis the chief symptom is a long excoriation. Itching occurs at irregular intervals, not limited to any particular time. On close examination the parasite may be found in the clothing.

In grain itch the lesions are not situated on the hands, wrists and other areas of predilection of scabies, the major portion occurring on the neck, face and upper part of the body and to a lesser extent on the extremities. The lesions are decidedly urticarial and there is complete absence of the classical gallery.

Treatment. Many methods of treatment have been suggested but as a rule a simple treatment is most efficient. For adults a 15 per cent sulphur ointment applied every day for five days, preceded and followed by a bath, is usually sufficient. It is important that the same clothing be worn next to the skin during this five day period. At the expiration of the treatment all clothing is sterilized and then a soothing lotion, such as the following, may be applied for two weeks. Bismuth subnitrate 4 gm., zinc oxide 8 gm., olive oil and aqua calcis of each sufficient to make 240 c.c.

As overtreatment occurs so frequently, it should be emphasized that the application of the sulphur ointment should be limited to five days. Should by any chance the disease show activity after the two weeks soothing treatment, the sulphur ointment may be used again.

An ointment first used by Ehlers (see Practical Medicine Series, 1921, Vol. VII, p. 95) in Denmark in 1911 and since then extensively in that country is efficient and requires only one application. This method is rarely followed by dermatitis and probably will be employed more and more as its advantages are made known. The ointment is applied over the entire cutaneous surface after the usual cleansing bath and allowed to remain for twenty-four hours, when a second bath is taken. This single application is usually sufficient to eradicate the disease. Should a dermatitis occur, it may be treated with the cream above suggested for the sulphur dermatitis. This ointment should be prepared as follows: 1 kg. of sublimed sulphur is dissolved with mild heat in 2 kg. of a 50 per cent solution of potassium hydroxid. To this is added 225 gm. each of anhydrous lanolin and vaseline which have first been rubbed together. To this is added zinc hydroxid, prepared by mixing 28 gm. of zinc sulphate and 40 gm. of 20 per cent sodium hydroxid. Finally, liquid paraffin is added to obtain a total weight of 1000 gm. A small quantity of benzaldehyde is added to overcome the disagreeable odor.

Grain Itch occurs in small epidemics from May to September. It is caused by a parasite (pediculoides ventricosus), somewhat resembling the ordinary itch mite. Unlike the latter, however, this parasite does not penetrate the skin. The disease is commonly induced by the individual coming in contact with grain or straw infested with the parasite. Thus a group of workmen or several members of a family may be attacked. Its mode of transmission, therefore, also differs from that of scabies.

The cutaneous symptoms somewhat resemble urticaria and varicella in addition to scabies. Schamberg considers the essential lesion to be an urticarial wheel, centrically capped with a vesicle. In place of the vesicle a pustule may occur and in addition there may be seen erythemato- and papulourticarial lesions. The lesions are pea to finger-nail in size and usually pink. A secondary traumatic dermatitis is present, due to the intense itching which is augmented at night. (There is commonly a slight elevation of temperature.) The eruption is usually diffuse and involves the neck and trunk and to a lesser degree the extremities.

Diagnosis. Urticaria is distinguished by its ephemeral lesions, lack of vesiculation, as a rule, and occurrence in isolated cases in place of groups. Varicella is distinguished by less itching, larger dew drop like vesicles or pustules, surrounded by a red areola in place of small vesicles upon an urticarial lesion and the preponderance of cases occurring in children. Scabies is differentiated above.

Treatment. Removal or sterilization of the source of supply of the parasites soon terminates the disease. For local application Schamberg recommends beta-napthol 2, sulphur precipitate 2.66, adepis benzoate 30.

IMPETIGO is a fairly common superficial contagious disease and very frequently unrecognized. For several years there has been a tendency to call this disease "barber's itch" on account of its propagation thru the barber shop. As hyphogenous sycosis has long been known as "barber's itch," this term should not be applied to impetigo.

As seen today in adults, the disorder consists of several superficial crusted lesions occurring about the face. In children it occurs on the hands and other areas as well as on the face. The early lesion, which is an erythematous macule, is very soon surmounted by a small vesicle. This enlarges, becomes pustular and in the course of two or three or four days drys and forms a crust. Occasionally the vesicles develop into bullous lesions. This type of impetigo occurs not uncommonly in warm countries.

The so-called contagious pemphigus occurring in new born infants is bullous impetigo. Frequent epidemics of this have been known to follow in the wake of certain midwives. I have seen several small epidemics in the maternity wards of hospitals, where the infection was spread from one infant to another. In the delicate skins of infants the microorganisms are more virulent than in isolated cases of bullous impetigo, thus producing a wide-spread and more serious disorder. In adults the lesions frequently desiccate in the center, producing annular or ring-like lesions, in which case the disease is sometimes mistaken for ringworm. There are practically no subjective symptoms in any type of the disorder.

Diagnosis. The common type could hardly be mistaken for any other disorder. The ringed bullous type may be mistaken for ringworm but the absence of vesicles and the presence of a bullous ring and absence of the subjective symptoms and the location of the lesions on the face would readily rule out ringworm. Pemphigus of the newborn is very rare and is more serious than impetigo and soon affects the general condition of the patient. The bullous lesions of impetigo in infants occur in those that are well nourished, tho in a certain percentage of cases the disease becomes serious. The bullous syphiloderm is usually limited to the palms and soles of infants and is readily distinguished from the so-called pemphigus neonatorum by the difference in location. In addition there would probably be other signs of syphilis in that disorder.

Treatment. The ordinary cases in adults respond very well to bathing with a one to two thousand solution of mercuric chlorid each evening, followed by the application of a three to eight per cent ammoniated mercurial ointment. In the morning a ten per cent mercurous chlorid dusting powder is of value. As a rule the disorder is cleared up in one week.

RINGWORM. This disease in its varied manifestations has always been a problem. Its intractable nature when occurring in the scalp has made it of social and economic importance. As the disease is contagious, its subjects are barred from school and, as it formerly took months or years for its eradication, a hardship was placed on its victim. To overcome this, special schools were established in several of the larger European cities, notably London and Paris. Fortunately thru the improved technic with radiotherapy, the time required for the eradication of the disease has been so reduced that the schools and hospital beds, formerly required, have now been largely abandoned. Comparatively recently ringworm of the hands and feet has assumed importance, particularly to the general practitioner. This type will be more fully described after a short review of the earlier known varieties.

Aside from the type just mentioned, ringworm of the scalp in children is the commonest variety. Ninety-five per cent of our cases in this country are produced by microsporon audouini. In these there is often one patch but there may be several. The area involved consists of a circular patch of partial alopecia, in which broken stumps of hair remain. Each stump is surrounded by a gray sheath which consists of spores of the parasite. There is practically no redness and very little itching, the chief difficulty being the moderate alopecia and the obstinacy of the disease.

Occasionally, instead of there being one or more large patches, the disorder is spread thruout the scalp and consists of small areas of alopecia presenting black dots over the surface. These black dots are the ends of hairs broken off at the point of exit of the hair from the follicle. This type is produced by megalosporon endothrix. In England, where this occurs more commonly than here, it is frequently called black dot ringworm, or the ringworm of Alder Smith.

Kerion is another uncommon type. This occurs in the scalp of children and on superficial examination presents the appearance of a large flat mildly inflamed carbuncle. The affected area is edematous and presents pseudofluctuation. If there is a suppurative folliculitis present, a moderate amount of discharge may escape from the follicles, inducing crusting. The parasite in these cases is frequently transferred to children from animals.

Ringworm of the beard is uncommon and is induced by the microorganism which produces kerion and the symptoms are similar. A folliculitis and perifolliculitis induces a nodular condition. The hairs soon fall from the nodules, leaving bald areas. The condition may occur on any part of the bearded region but usually it occurs beneath the inferior maxilla. Occasionally a dry form occurs in the beard, when the causative parasite is the megalosporon endothrix.

In ringworm of the glabrous skin two types are encountered, the dry form induced by megalosporon endothrix and the moist produced by megalosporon ectothrix. In both forms a small area occurs and spreads by pripheral extension, clearing in the center as it spreads. In the first type, redness and scaling only are present; in the second, vesicles, pustulation and crusting. Rather marked itching occurs in both varieties.

In ringworm of the nails there are dystrophic changes. The nail surfaces present a crumbled worm-eaten appearance. Different microorganism produces the symptoms in the nails. It is thought the commonest microorganism is the megalosporon ectothrix.

A type of ringworm that occurs on the body has long been known under the term eczema marginatum. This occurs, as a rule, in the area that comes in contact with the saddle of the horse-back rider. In these cases a well defined area of redness with a slightly elevated scaling border is present.

Similar symptoms occur occasionally in the axillary region. The disorder is so common among athletes as to be known as "gymnasium itch." The microorganism found in these cases is responsible for disease, as it occurs on the hands and feet in the major portion of instances.

Diagnosis. Ringworm in the scalp should always be proved by a microscopic examination of the hairs. This is easily done and, in a matter that could be as serious as this, positive proof should be had. On the glabrous skin the condition resembles pityriasis rosea, dermatitis seborrheica and psoriasis. In Pityriasis rosea the lesions will be found to be more numerous, are apt to be small (compared with ringworm) and are not accompanied by subjective symptoms of any moment. There likely will be a history of a herald spot, preceding the general eruption by four to eight days. Each lesion is brownish red, oval, and presents a clear center and a slightly elevated scaling border. The disorder is practically an acute eruptive condition.

Psoriasis and seborrheic dermatitis are readily ruled out by the absence of subjective symptoms. The number in these disorders is greater than that in ringworm and the location of the lesions is different.

Ringworm of the hands and feet is fairly common and its recognition has brought a group of supposedly different disorders together and opened the way for successful treatment for some obstinate cases. Most of the cases formerly classed as dysidrosis, many of eczema intertrigo of the toes, and a few of keratodermia of the hands and feet are now known to be examples of this type of ringworm.

The disorder may be acute or chronic with acute exacerbations. It has a tendency to recur and is usually more active during the warm months of the year. In the vesicular type the vesicles may develop rapidly over a large portion of the soles and palms or the lesions may be grouped in small areas, or patches develop slowly and at intervals in different places. The vesicles are deep seated and have a thick roof wall. Itching may be marked or moderate. The course of the disease varies as a whole but individual patches undergo involution in two or three weeks. The vesicles after attaining full development remain for a time, then dessicate and exfoliate, terminating the process. Thru reinfection the disorder is prolonged indefinitely.

In the intertriginous type, the skin between the toes, usually in the fourth and third interspace, becomes thickened, whitened and macerated and presents a fissure at the bottom. From time to time vesicular lesions extend from the area over the surface of the foot as far as the heads of the metatarsals. The intertriginious type is chronic and frequently resistent to treatment.

The keratotic form is rare and presents the appearance of keratodermia from other causes, except that it may be more inflammatory. The keratotic patches may be limited and small or diffuse, occupying the entire palmar and plantar surfaces.

Diagnosis. Every case that is clinically dysidrosis or eczema intertrigo of the feet and hands should be examined microscopically. The fungus is found in the roof wall of vesicles and in the deeper scales of the intertriginous type. The material to be examined is placed in a twenty-five per cent solution of potassium hydroxid on a slide and heated gently and examined, when mycelium is readily seen.

An intertriginous dermatitis of the fingers, occurring frequently in the third and fourth interspace, should be mentioned as this is produced by a yeast. Clinically this affection differs from ringworm in that the lesion is a well defined, red, shiny area, situated in the web. Vesicles are not present and microscopically a budding yeast may be demonstrated in place of mycelium seen in ringworm.

Treatment. Ringworm of the scalp may be treated successfully and safely with x-rays. When x-rays are not available, a useful application consists of iodine crystals mixed in goose grease in the proportion of one drachm to the ounce. Of the glabrous skin chrysorobin in the strength of five per cent either suspended in traumaticin or incorporated in an ointment base is efficient. Three to five days use is sufficient. The induced reaction is treated with a soothing application. The same preparation is of great value in the disorder as it occurs on the hands and feet. An ointment suggested by Whitfield is also very valuable and consists of salicylic acid 2 gm., benzoic acid 4 gm. in petrolatum 30 gm.

THE REMOTE EFFECTS OF BRAIN INJURIES *

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Lest there might appear some ambiguity in the title of this paper, it might be explained that the word remote is not an anatomic reference, but one of time, the effects which persist or appear months or longer after the original trauma. The data contained herein and the conclusions adduced are made from the study of a series of sixty-seven cases, drawn from military and industrial sources. Among the soldiers gun shot wounds predominated, being penetrating or even perforating lesions, and were observed from one to six years after the injury. In the artizans the damage had been produced by falls on the head, or blows with large instruments such as rocks, branches of trees, timbers, etc., either with or without fracture of the skull and were observed within a few months of the accident, except in one case, which was five years later. Among these latter, penetrating lesions were rare because, where such cumbersome missiles were projected with force sufficient to crush its chief defense and enter the brain, the destruction would rarely be compatible with the future existence of the victim. At any rate, in all cases the injury was such as to warrant the conclusion that actual damage had been done to the brain.

Pathologically the lesions fall into three main groups. In this connection the specific injury to the skull has not been taken into consideration, whether or not the skull had been fractured, and if so, the particular kind does not come within the scope of this review, since the condition of the brain only is under consideration. Speaking generally, however, it may be said that the greater the injury to the brain, the more extensive is the damage to the skull. On the other hand, there are a certain number of cases showing symptoms of severe brain injury, in which no clinical or radiographic method could demonstrate a fracture.

The first, then, of these three groups is concussion. In my opinion concussion is frequently a much more serious condition than is commonly believed. Being in itself rarely immediately fatal, we are precluded from making an extensive study of pathologic findings. However, in those patients who have been concussed but have succumbed to other injuries, such as severe crushing or hemorrhage other than the brain, we find at autopsy that the cortex is congested and dotted with minute punctate perivascular hemorrhage, and that there is often considerable subpial edema. This is doubtless the result of a sudden compression or squeezing of the brain, instantly producing transient anemia, the same as a blow in any other soft tissue, followed by reactionary dilatation of capillaries, minute hemorrhages and ultimately edema. In a tissue as fragile as cerebral cortex it is rational to conclude that this ecchymosis and edema may eventuate in molecular, or even cell degeneration, as evidenced by the symptoms which will be considered in due course.

The second variety of lesion is pressure, which may be local or general. If the former, it is due most frequently to depressed bone or to hemorrhage, either within or without the dura. If general, it is the result of excess of cerebrospinal fluid, or of edema either from the irritation following concussion or from interference with the more important sinuses.

The third group is destruction of brain tissue. Obviously the extent of such destruction must be more or less limited in each direction, i. e., breadth and depth, or surface area and penetration, else hemorrhage or involvement of vital centres would prove immediately fatal. There may, however, be quite extensive lesions with absolutely no focal symptoms, absent in fact in the majority of cases, but this is to be expected, since the cortical surface of silent areas is much greater than the remainder. Lesions of the pre- and postcentral convolutions, the angular gyrus, and the occipital lobe give information as to the extent and gravity of the injury, even tho external damage may not permit of visible or palpable calculation. On the other hand, obscured lesions in silent areas are the more difficult to estimate and may develop subsequent effects, the prognosis of which is exceedingly hard to make.

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Altho this paper purports to deal in the main with more remote effects of brain injuries, I would like in passing to mention very briefly the immediate ones. First and most important is unconsciousness. It may be a complete coma, a mere transient dazing, or any intermediate stage with irritability, muttering delirium, or a defensive response to painful stimuli. Speaking generally, the depth of unconsciousness is directly proportional to the degree of trauma. Hemorrhage and shock are the usual concomitants, with subsequent edema or paralysis. I mention these merely to note that, when one is called upon to deal with a patient presenting himself months or may be years after his accident, with disabilities actually or allegedly due to a brain injury, it is important to know and estimate the extent of immediate symptoms, as they may have an important bearing on the subsequent condition. Immediate subjective symptoms are headache, vertigo, asynergia, amnesia, asthenia, etc., which persist for an indefinite period, varying from a few days to several weeks and ultimately terminate in death, complete or incomplete recovery. It is the last eventuality with which I wish to deal more specifically in this paper.

Unfortunately I am not in a position to state what percentage of the whole comes within the class of incomplete recoveries. Such information is difficult to obtain, since those who recover are too indifferent, or too preoccupied to report their continued good health, and even those who later do develop symptoms attributable to their accident, may, in a transient population such as exists in the industrial world of the Pacific Coast, have passed beyond the field of one's observation. In the army, however, where pensions have to be considered, altho actual statistical data are not available, one can draw conclusions and I am becoming more and more convinced that the majority of individuals who have had severe brain injuries are ultimately incapacitated thereby.

Before proceeding to a discussion of late symptoms, it might be of interest to digress for a moment to call attention to the liability to sudden death. In my series there were four patients who experienced this termination. Two had been in apparent good health and were engaged in normal selfsupporting occupations. The other two, altho not confined to bed or hospital, were unable to work. Fortunately an autopsy was performed in each case. Of the former two, one had acute meningitis, and the other a cerebral abscess, while in the latter, one had acute edema, and the other a severe subpial hemorrhage. In all, death had occurred within two to four years of the original injury. They were all war-disablements and so far as I know no other military cases have terminated in such a manner. I am, therefore, prone to conclude that, if a patient survives five years after his injury, he is not particularly liable to such a tragic end incident exclusively thereto.

In this relatively large number of incomplete recoveries there is a wide variety of symptoms. Notwithstanding their diversity they fall roughly into three groups, but it must be understood that there is a tremendous overlapping and any one patient may exhibit the whole range of symptoms.

1. Physical. These are objective and are the definite results of damage to specific portions of brain. Chief among them is paralysis which was present in 24 per cent of the series. Next in order of frequency was change in sensation in 22 per cent. It is natural that these two should occur with comparatively equal frequency, since they are the result of lesions in the pre- and post-Rolandic area respectively and each gyrus is equally exposed. I might explain that changes in special senses are not included. Only two cases in the series had hemianopsia, and one unilateral deafness, due in all probability to a complete section of the auditory nerve. In no case have I seen anosmia. Fits have developed in 14 per cent of cases, while 10 per cent showed previous or present optic neuritis and 16 per cent had increased reflexes.

2. Mental. In this class I include those cases where cerebration had been actually diminished. Memory was definitely impaired in 22 per cent, total amnesia being present in one case. Inability to concentrate was present in 18 per cent. Under this term I have included a rather vague group. In the industrial world miners and loggers are more exposed to cranial trauma than any others and with them close concentration is not a vital factor, but any one who could not read for any length of time, who was unable to comprehend what he read or comprehending, failed to remember it later, who could not make simple calculations, or would make errors in change or who was absent-minded as to time or place, was included in this category.

In this connection one must be careful not to confuse memory and concentration. Too often to memory is attributed the defect, whereas concentration is so poor that facts either have had no mental fixation or else so little that memory is unable to recall them. Emotion was disturbed in 10 per cent. This includes undue elation, tendency to periods of excitement or paroxysms of anger, and an irresistible feeling of depression. Sometimes this depression is accompanied by an inexplanable sense of impending disaster which drives the sufferer to repeated lachrymation or even contemplated suicide. In two cases mentality had been so altered that certification became necessary and in one of them memory, volition, will, reason and emotions were a blank. It is a fact often noted that many patients with severe gross destruction of cerebral tissue show a marked deterioration in mental power. The lack of initiative and stamina, or a reversion to childishness occurs with much greater frequency than our early teaching of physiology and pathology, as based upon the famous crow-bar case, would lead us to believe.

3. Psychic. The third group I have placed for want of a better term under that of psychic. Herein no gross lesion of the brain can be demonstrated, and no definite impairment in mentality due to gross cerebral destruction obtains. Insomnia, tremors, asynergia, stammer, incoordination and various phobiae, chief of which is the fear of elevated places, occur in that order in from 18.5 per cent. Tremors, fatigue and phobiae form a triad of symptoms which occurs with considerable frequency and is very characteristic.

In the above grouping I have purposely omitted two of the most common symptoms. This has been necessary because they are not restricted to those patients who show a preponderance of symptoms in any one group, but occur in all three and are found in 56 and 28 per cent respectively of all cases. I refer to headache and dizziness. Altho they are present, as I said before, in all three classifications, they are much more common in those patients whose symptoms are chiefly psychic. Headaches vary greatly. They may be periodic, recurring daily for a few hours, dull with a sense of pressure or band around the head, shooting with a sensation of bursting and worse on stooping, or constant with varying regressions or exacerbations. Their importance lies in the fact that they cause the greatest amount of discomfort to the patient.

It must be understood that, tho symptoms can be classified thus, the cases do not by any means definitely fall into any individual category. There is much overlapping. One case may show symptoms in all three groups or a definite paralytic may have all the psychic symptoms. On the other hand, I think it is an error to assume that those cases showing purely psychic symptoms are functional in type, merely because no focal symptoms can be clinically demonstrated. From the circumstances of the accident and the subsequent history of the case we may correctly deduce that there has been an actual injury to the brain itself.

What, then, is the pathology of the condition? The answer must be more or less theoretical. My own opinion is that there is a sustained irritation or even a cellular degeneration, brought about in two ways. First, as the cortex is most exposed to trauma, there occurs, at the time of the accident, a diffuse minute punctate cortical or subcortical hemorrhage which either immediately destroys adjacent brain cells or causes them later to degenerate. Second, the initial injury produces an edema and an increase in the quantity of cerebrospinal fluid, which in turn exerts an abnormal pressure on the whole surface of the cortex, resulting in temporary or permanent dysfunction or afunction of the grey matter cells. The irritation of this pressure stimulates the activity of the choroid plexuses, in a natural endeavor to wash away the irritant in a flood of cerebrospinal fluid, but, to draw upon the delights of paradoxical mixed metaphor, only succeeds in adding fuel to the flame instead. Thus a vicious circle is established.

Such a condition develops much more commonly after severe concussion or fracture of the skull, either fissured or depressed, than it does after penetrating missiles. In the latter the cranium is perforated and any excess pressure is thereby relieved. However, the so-called psychic symptoms do follow sometimes compound fractures, but in the cases I have observed they could be atributed to a mild infection with insufficient vent. Among these latter, there had been in several cases a history of papillitis.

In any event the outcome is either recovery or permanent damage. Many patients, if kept perfectly quiet, both physically and mentally, for two or three months, will get quite well without further treatment. Parenthetically I would like to mention that I firmly believe that any patient, suffering from severe brain bruising, even without fracture of the skull or demonstrable cerebral lesion, should be kept at rest for two to four weeks after the injury. If this is done, subsequent psychic symptoms will never develop in the majority of cases but, if they do arise, it may require as many months for their alleviation, if indeed they can ever be completely allayed. Might I make a plea for more prolonged rest than is commonly given, for I am convinced that by so doing there will be an ever diminishing number of patients showing protracted manifestations.

When recovery does not take place, degeneration of brain cells eventuates and the patient is permanently damaged. The time required for this permanency to be established, I must confess I have been unable to determine, but I have seen cases improve when treatment has been instituted several years after the injury.

We now come to the important question. What can be done for these sufferers? That they do suffer physical inertia and mental depression, even to the state of contemplated suicide, is undeniable. Based on the foregoing hypothesis, relief of pressure and removal of continuous tension is the logical method of procedure, which in my experience may be satisfactorily undertaken in selected cases. First, as regards time, the injury should be sufficiently old to preclude spontaneous recovery and sufficiently young to antedate the degeneration of brain cells, a period, I should say, of two or three months on the one hand and two to three years on the other. Second, there must be definitely increased pressure present. This is evidenced by a haziness of the optic discs, sometimes with exudate and obscuration of vessels, headache recurring in type with a bursting sensation worse on stooping or straining, occasionally seizures of unconsciousness and, finally, by the spinal manometer when it registers above 12 mm. Hg.

Wherever pressure is due to local irritation, the cause should be dealt with. Hence, depressed fractures should be elevated, rough edges of bone made smooth, unabsorbed blood clots or cysts removed, or old adherent cicatrices freed from pachymeninges. In this last condition of adherent scars, the question of procedure after it is freed takes us very far afield into a discussion much too broad for the scope of this paper, but I might mention briefly that in my opinion the grafting of bone is the most suitable method to adopt.

General increased pressure may be approached in three ways:

1. Eliminative. Rest in bed with sufficient magnesium sulphate each morning to produce six to eight watery evacuations daily for a period of a week will in some cases give marked relief. In one patient, where a subtemporal decompression had been done and where indiscretion in living or excess exertion and excitement would produce a marked increase in pressure, replacing the usual concave depression in the skull by a tense bulging, causing a violent headache, frequently culminating in epileptoid seizures, this treatment invariably gave relief, until in his foolishness he would repeat the error. If adequate precautionary measures were maintained after the purgation, he would have months of comfort.

2. Repeated spinal puncture. This is more suitable in those cases where the symptoms have been of short duration, say two or three months. So many patients appeared to have a retrogression of the symptoms for a time after routine puncture for observation purposes, that I attempted it as a therapeutic measure. In the first patient, who had been admitted to hospital some four months after a fissured fracture of the skull with severe concussion, a lumbar puncture was done in routine investigation and the result from a therapeutic standpoint was noted. The next day he volunteered the information that the treatment to his back was "great stuff." "It just cleared my head and I feel fine." The pressure had been 18 mm. Hg. Several days later the puncture was repeated and the improvement was so marked that he was discharged from hospital and a limited amount of physical exertion permitted. About a month later he returned with a recurrence of symptoms but less severe. Puncture was again done with beneficial results and after another repetition, four weeks later, he was quite well and able to resume his occupation. Lest it might be argued that recovery was due to the ten weeks rest, I might state that during the preceding four months he had long periods of continued rest with no amelioration of symptoms.

3. Subtemporal decompression. In older cases, where symptoms are fixed, continuous or tending to become worse, this operation should be undertaken. In the time alloted for these papers, detailed reports of cases are impossible but I would like to quote briefly one case illustrative of this phase of the subject.

D. W. Miner, age 47. Was first seen June, 1922. He complained of headache, faintness and fits. In February, 1917, i. e., five years previously, was hurled by a runaway car in the mine against the side of the tunnel, striking the left side of his head. He became immediately unconscious and remained so for two hours. On recovering there was no paralysis but he had severe headache and definite loss of euphoria. The symptoms persisted with greater or less severity for three months, when he attempted to return to work but was only able to continue by the loss of five to seven days per month, on account of faintness and dizziness as well as headache. In February, 1919, he had a fit, in which conciousness was lost for ten minutes, muscles spastic, face cyanosed, tongue bitten and urine passed involuntarily. In May, 1922, he had another similar seizure but more severe than the first. In the interval, the headache, vertigo and dysphoria had persisted.

On examination there was no focal nerve lesion but the spinal fluid was under 22 mm. Hg. of pressure. Pulse 60 per minute. Blood pressure normal, discs were clear cut and x-ray examination negative. After a period of some weeks rest, in which he showed some improvement, he was advised to return to lighter work and to report his condition later.

February, 1923, he returned and reported that his headache was recurring daily with greater severity, worse on exertion or stooping, that the frequency of his fits had gradually increased to one or two per week and that he was getting very discouraged. On examination there was a marked deterioration in mentality. He was very depressed and emotional, bursting into tears on any provocation; declared that life was not worth living and would certainly suicide, were it not for his duty to wife and children. A fine tremor was present and deep reflexes were increased. The optic discs were slightly hazy and spinal pressure was 30 mm. Hg.

A subtemporal decompression was done. On incising the dura, the brain was distinctly edematous, and bulged into the cranial opening. He had one slight fit three weeks after the operation but otherwise made an uneventful recovery and was discharged from the hospital in five weeks. There was still bulging of the scalp over the cranial opening but six weeks later this was entirely replaced by a distinct concavity. The headache, dizziness and mental depression had completely ceased. He resumed work of a somewhat lighter nature than his original occupation and seven months after operation had had no return of the fits or other symptoms.

In conclusion let me summarize briefly:

1. Every brain injury is serious and apparent early recovery does not preclude the development of late symptoms.

2. All remote manifestations should at first be regarded as organic in origin and not casually discarded into the melee of neuroses.

3. Late symptoms are probably due to chronic intracranial pressure.

4. Prolonged pressure may eventuate in molecular or cell degeneration.

5. In all old cases chronic pressure should be looked for, and when present relieved by spinal puncture or subtemporal decompression.

CLINICAL ASPECTS OF BRONCHIAL ASTHMA AND HAY FEVER *

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I shall begin this paper with an apology for its title which sounds as if bronchial asthma and hay fever were two different diseases. Such is not the case. Both represent symptoms of different etiologic type but are due to the existing condition, hypersensitiveness to certain chemical bodies, mainly proteins.

This condition is a pathologic one and is known as allergy. Coca defines allergy as a natural inherited condition of hypersensitiveness which is independent of immunologic antibodies, while anaphylaxy is an induced, noninheritable hypersensitiveness, due to the presence of specific antibodies. This definition, which has been accepted so far, no longer holds. Today we understand the term allergy as a natural inherited condition of hypersensitiveness to certain substances, mainly proteins, *due to the pathologic presence of specific antibodies* in the system of the allergic individual.

De Besches' experiments have proven that it is possible to inoculate guinea pigs with serum of patients who are sensitive to horse serum, and thus make these guinea pigs likewise sensitive to horse serum. This, of course, is possible only if there are specific antibodies present in the serum of these patients. The presence of these specific antibodies is the pathologic condition, as Rackemann formulates it, while normal persons lack them. Just why these antibodies are present in the serum and in the cells of certain persons has not yet been determined. Selfridge and Pollock claim that the underlying cause is a disturbance of endocrines, which would explain the tendency toward heredity. Pottenger in a very interesting article states that changes in the thyroid, parathyroid and pituitary glands may cause an increase of the potassium-ions in the bronchial cells, which he thinks is the cause of asthma. The potassium stimulates the parasympathetics, particularly the vagus, and the hyperirritability of the bronchial neurocellular mechanism is due to a vagotony. Perkins blames only the thyroid for the asthma, especially for the food idiosyncrasies. At any rate, the conception of bronchial asthma and hay fever is now established as an allergic condition.[1]

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[1] It was as early as 1831 that Elliotson first attributed hay fever to the action of pollens, and in 1873 Blackley induced attacks by inhalation of pollen and further experimented by making skin tests. The first scientific investigations, however, were not made until 1905, by Dunbar, while Wolff-Eisner in 1906 first compared hay fever to an anaphylactic condition.

The asthmatic attack as such is an agioneurotic shock, taking place in the mucosa of bronchi and bronchioles. Two facts characterize the mechanism of the asthmatic attack: first, muscle spasm, causing contraction of the finest branches of the bronchial tree; and, second, congestion of the glandular layer of the mucosa, namely, swelling of this layer and overactivity of the glands. Postmortem findings as described by Huber and Koessler show a greater thickness of all layers of the bronchial walls.

We classify asthma into six different types, acsording to the offending cause: (a) Pollen asthma, (b) epidermal asthma, (c) dust and powder asthma, (d) food asthma, (e) bacterial asthma, (f) nonprotein and reflex asthma.

Pollen asthma or hay fever is caused by the action of pollens from trees, bushes and flowers; epidermal asthma by the action of animal hair, dander, feathers, etc.; dust and powder asthma by the inhalation of house dust, by face powders, scents and perfumes. Food asthma is due to the ingestion of certain food proteins, to which the asthmatic individual is sensitive. Bacterial asthma is due to the absorption of bacterial proteins.

This form of asthma is the subject of much controversy. The cutaneous test with bacterial protein was introduced but soon abandoned, as we very seldom succeeded in getting a positive reaction to the bacterial proteins. For this reason some authors doubt the existence of bacterial asthma, and, like Piness, call it asthmatic bronchitis and deny its allergic nature. There is no question that the clinical picture of these cases is identical with cases of undisputed allergic asthma. Further proof lies in the fact that we relieve and cure many of these cases with bacterial vaccine, just as we relieve pollen asthma with pollen vaccine.

But why do we fail to produce a proper skin reaction with the bacterial proteins? I believe it is because these proteins are absorbed in split form in the patient's system, while the bacterial proteins we use for test purposes are prepared in the laboratory and may have entirely different biologic properties. Further, Fleischner, Meyer and Shaw succeeded in sensitizing guinea pigs with bacterial proteins, without the skins of these animals showing any reaction to the same proteins, and proved thereby that an allergic hypersensitiveness can exist in the serum without the least cutaneous sensitiveness. This shows that the negative skin test is no proof against the bacterial origin of this kind of asthma.

These cases, as Hurwitz points out, often commence after some respiratory infection (whooping cough, influenza, bronchopneumonia or tonsillitis), which fact favors the theory of their bacterial etiology. Heckmann is of the same opinion, and reports over 300 asthma cases, most of which he traced to some infectious disease. Huber and Koessler, who have established the fact that eosinophilia is pathognomonic for allergic asthma, state that a number of these cases of bacterial asthma show eosinophilia in blood, sputum and tissue and, therefore, are true allergic asthma. Only cases which have no eosinophilia are not allergic but intoxications, very probably with peptones or amines, bronchospastic poisons, formed by the action of bacteria on tissues.

Ramirez and St. George, in a paper recently published, advance another theory. They distinguish all cases having a negative skin reaction to proteins as "endogenous asthma," and claim to have found protein putrefaction in the stools in all such cases. They further advance the idea that protein cleavage products may be the cause of the hypersensitiveness.

There are asthma cases which are hypersensitive to substances other than protein. I classify these with reflex asthma, with the idea in mind that these individuals have a very irritable parasympathetic nervous system and that different chemical and mechanical factors stimulate the vagus, while a regular allergy with antibodies does not exist in these cases. Nonproteins causing asthma are drugs, such as quinine, ipecac, aspirin, iodoform or procain. Cooke reports a case with a very marked hypersensitiveness to glue, and Oliver tells about a case of typical asthma caused by lead poisoning, due to the use of a lead-containing hair dye. Baccarani cites cases reports, where probatory puncture of the pleura brought on typical asthmatic attacks of short duration in two instances. This form of asthma, and asthma caused by vagus irritation owing to enlarged bronchial glands, are classified as reflex asthma.

The neurotic phase of asthma, formerly known as "asthma bronchonervosum," because of its direct connection with the general status of the nervous system, should not be overlooked. Gundrum cites an interesting case of an asthmatic who developed a delirium tremens and observed that, when in the midst of an asthmatic attack the patient became delirious, promptly the asthma disappeared, and normal breathing was restored; but as soon as the patient returned to consciousness the asthma returned.

The above mentioned six types of asthma can occur, and frequently do occur in different combinations or change around. Food asthma, which is most often observed in children, very often in later life changes to pollen or epidermal asthma.

Allergic condition must not necessarily always manifest itself in the form of asthma. It may appear as eczema, urticaria, angioneurotic edema, gastro-intestinal disturbance, etc.

Before closing the theoretical chapter, I might mention the strong hold which asthma has taken on humanity. Davidson estimates 10 per cent of all human beings as suffering from some form of hypersensitiveness. Tho this figure may be somewhat exaggerated, nevertheless the number of pollen-asthmatics alone in the United States totals more than one million.

DIAGNOSIS

The *history* of the patient is the most important factor enabling us to make correct diagnosis as to the etiology in asthma. It very definitely points out the sources for investigation and the necessary tests to be made. A close investigation as to the early attacks is most important, because later nonspecific factors may induce attacks. Older cases of asthma react to nonspecific irritations, as cold, dampness, overexertion, nervous or physical fatigue, irritating vapors, etc.

We get an atypical history in hay fever, if this is associated with some other allergy. In most cases we will trace heredity. A history of eczema in early childhood points to food asthma. If the attacks occur only seasonal, we suspect pollen asthma. It is necessary in such cases to always bear in mind the possibility of hypersensitiveness to seasonal food, such as strawberries, asparagus, shellfish, etc. All-year-round asthma is mainly due to food-epidermal or dust-allergy or of bacterial type. In climates where grasses, flowers and bushes blossom thruout the year, pollen asthma may be continuous, nonseasonal. In our climate, here in the Northwest, there is pollen in the air thruout eight months of the year. Willows, alder and hazelnut start to pollinate as early as February, and some of the common grasses, as well as pigweed, goosefoot, and other weeds, continue to blossom as late as the end of August.

The cutaneous test. Some authors recommend the intradermal test, done with needle and syringe, as being most accurate and reliable. I personally prefer the so-called scratch test, because it is less dangerous, and does not so often cause a constitutional reaction, that is, an allergic shock. It is simpler, reaches the same tissues, namely the superficial layer of the skin, equally as effective, and perhaps more certain than the intradermal injection.

A small scratch is made with a needle or a vaccine lancet, and the protein, liquid or powdered, applied. Control is made with normal 10th sodiumhydroxyd solution, which is also used for dilution of the dry proteins. The reaction usually occurs between ten and twenty-five minutes after, but in some instances does not show up until one hour afterwards. It appears in the form of a whitish wheal with pseudopodia-like projections, surrounded by an erythema. The wheal should be at least 5 mm. in diameter, in order to be considered positive. Itching of the area of positive rection is often present before the wheal appears.

A few words as to the importance of taking local conditions into consideration when making pollen tests. The textbooks and the directions, given by the different vaccine manufacturers, deal mainly with prevailing conditions in the east, middlewest and in the southern states. In the northwestern part of Washington we are in general less subject to hay fever than people in the eastern states; particularly so to the dreadful fall hay fever, due to the ragweed and worm-wood pollens, as they are practically unknown west of the Cascades. There is also a difference in the predominating grasses. Velvet grass and perennial rye are in this section of the country the most important causative factors for late spring and summer hay fever. The principle of going into detail as to specific conditions applies, of course, to each locality, differing in pollen plants and seasons.

The tests in epidermal asthma are very reliable and always give authentic information. The most common cause in this class is horse dander. These people are also sensitive to horse serum and it is necessary to call their attention to it, so that they may avoid being vaccinated with vaccine containing horse serum. Children are most frequently hypersensistive to rabbit hair, used in upholstering, pillows, toys, etc. Allergy to animal emanations is very often combined with food idiosyncrasy or bacterial asthma and it is, therefore, necessary to investigate in this direction. The same applies to the dust and powder asthma. Allowing a patient to carry a cover-glass, prepared with glycerin, for a period of twenty-four hours or longer, is a valuable method used in determining the offending pollen or dust. Pollens or other substances which float in the air in places where the patient lives will be found in this way.

Diagnosis in food asthma is often very simple, but in many cases rather uncertain, because foods in the system come in contact with the intestinal epithelium in split form, while for test purposes we use them in their original form. The method of applying six or more food proteins in one mixture, the so called group-test, seems to be theoretically wrong because the skin reaction is exceedingly delicate, as is shown by the following. Skin reaction to wheat protein is usually slight; but if tests are made with the individual proteins contained in wheat (proteose, leucosin, globulin, glutelin, and glutenin) skin reactions are more intensive. Of twenty patients sensitive to wheat, eleven reacted to whole wheat protein, and nine to some of the isolated partial proteins only, proving that many an unsolved case, giving no reaction to the whole wheat protein, may nevertheless be caused by wheat, and by failing to test with said partial proteins we do not arrive at the correct diagnosis. The same thing may be true of other foods.

Hooker further illustrates how complicated and delicate allergic reactions may be. He found that an injection of 0.1 c.c. in a woman sensitive to horse serum produced three skin reactions simultaneously, at intervals of several hours. Experiments showed that the three predominating proteins contained in horse serum (pseudoglobulin, euglobulin and albumin) produce reactions at different times. Hooker found one individual who was sensitive to only two of these partial proteins, and therefore showed only two subsequent serum rashes.

As afore mentioned, food allergy does not always present itself as asthma, but may be in the form of eczema, urticaria, or angioneurotic edema. We have known for a long time that the last two conditions may be caused by some variety of fruit, vegetables, fish or shell-fish. Thus we now make skin tests as in asthma, in order to determine the offending food. Eczema in infants is often a food idiosyncrasy.

Fully appreciating the enormous progress we have made in the last few years, we must admit that there still remain many problems to be solved concerning the asthma diagnosis. Sanford, of the Mayo-Clinic, states that only about 25 per cent of the investigated asthma cases show a positive skin reaction, which is significant and a valuable aid in therapy. Most of these are pollen reactions. One difficulty presents itself in cases of long standing which, after being cured of one idiosyncracy, soon develop another. Sanford publishes the case of a man, who successively went thru the following allergies: first wheat and eggs, three years later rye, tomato, oats and barley; still later clover and alfalfa pollen.

TREATMENT

The treatment of all forms of asthma may be divided into two classes, nonspecific and specific methods. Nonspecific treatment is the older one, dating back to preallergic days, and should today be used only for cases wherein the etiology cannot be determined. Innumerable remedies and methods have been on the market, some of which work quite good. All antispasmodic drugs have been employed, narcotics, belladonna, chloroform, nitrites, sodium iodide, benzyl-benzoate, etc. The most effective drug is adrenalin, given hypodermically or even by mouth, 3-5 mm. giving relief lasting several hours. The inhalation of strammonium-leaf smoke is an old and sometime very effective remedy but loses its efficiency after the patient becomes accustomed to it. A modern method is the intravenous injection of calcium chloride, 5 c.c. of a 5 per cent solution repeated often. It increases the sympathetic nerve action, decreases the vagus tonus and has a more lasting effect than adrenalin. Pottenger and Stark recommend this method. I have used afenile, that is, calcium chlorinated urea, with good success.

Another nonspecific method is the endobronchial application of drugs, as Gottleib recommends. He gives 10 per cent silver nitrate, tanic acid or orthoform directly into the trachea and claims good symptomatic results. This method works in the same direction as the different sprays but is more effective. Barcot, Klewitz, and others report successful treatment with x-rays.

The tuberculin treatment of asthmatic conditions is another nonspecific method, as in only 0.8 per cent of tuberculosis real asthma is found and etiologic connections between these two diseases do not exist. There are many reports of good results with this method. Van Leeuwen and Varekamp report twenty-eight cases with positive cure in eighteen. Viton, Douveyron, Bonnamour and Duquaire are others. I have given tuberculin in many cases, using it as a foreign protein. The doses used are quite high, which is a proof that this is a nonspecific method, as specific vaccines cannot be given in so high a dosage. The same applies to typhoid vaccine, bacterium coli and other vaccines which are recommended. Any other foreign protein preparation, such as milk or peptone, may be used. The latter has recently been recommended by Mason and Chandler as a polyvalent desensitizer, given hypodermically or by mouth, while Veitch uses a mixture of peptone and vaccine, given intramuscular.

The surgical correction of complicating conditions, as hypertrophy of turbinates, deviated septa, infection of the paranasal sinuses and polypoid growths is also a nonspecific aid to treatment in some cases. Indiscriminate operating on the nose and accessory sinuses in asthmatics has been condemned by Heathy and Crowe. Kahn recently published thirty-three cases wherein extensive operations brought no improvement to the asthma, even tho they relieved obstruction. In line with this is Kuemmel's interesting method who resected the three cervical ganglia of the sympathetics which control the construction of the bronchi and thereby relieved some very severe cases.

Some nonspecific by-effects of asthma, as for instance, enlarged bronchial glands, chronic bronchitis, naso pharyngitis, etc., demand their proper treatment and the quartz lamp has been used for some of these complications with success. Many of these conditions, however, disappear if specific treatment clears up the asthma.

Specific treatment is, of course, the treatment of choice. It is the only scientific and the most successful method, if the proper etiologic diagnosis can be made. In pollen asthma we must consider the removal of the patient from the pollen region as a specific treatment, but it can seldom be done. Therefore, vaccination with the pollen antigen is more practical. Treatment is preferably prophylactic, begun four to six weeks before the usual onset of symptoms. I always inject part of the vaccine intradermally, in order to increase the cellular immunity as well as the humoral. The optimal dose should be given at weekly intervals thruout the pollen season. If treatment is begun while the attack is already on, it is advisable to give small doses daily, steadily increasing until relief is obtained and then proceed as above. Ersner recommends starting with bacterial vaccine, if the treatment must be commenced during the attack, which method I follow because it makes it possible to give larger doses of the nonspecific bacterial vaccine and obtain quick relief, while at the same time the specific treatment with pollen extract is inaugurated.

The results of the specific treatment of pollen asthma are very good. Failures are due either to too small a dosage or to the use of the wrong pollen extract. Thoro investigation of local condition as to the pollinating plants and their seasons will enable us to be more correct in diagnosis and more successful in treatment. I wish to mention Tonart's method of giving pollen protein in salol-coated pills by mouth. He reports four good results in six cases. Some authors recommend the local application of pollen into the nose and to the conjunctiva. It should not be done in the beginning of a treatment, as the amount of pollen absorbed cannot be controlled. In the later course of treatment, when a certain degree of immunity is established, it is sometimes of value to let the patient use either a spray of pollen vaccine or a powder containing dried pollen.

The treatment of epidermal dust and powder asthma consists mainly in keeping the patient away from the offending cause. Only when this cannot be done should desensitization be made. It is necessary to start in with very small doses, as this class of asthmatics is sometimes highly sensitive, and an unpleasant constitutional reaction results.

If such an allergic shock occurs, consisting of pallor, dyspnea, cough, urticaria and faint feeling, adrenalin should be injected immediately—1 c.c. of 1:1000 solution and a tourniquet applied to the arm, where the test or the inoculation has been made. The adrenalin may be repeated if necessary, strophanthus and morphine being given later.

The treatment of food asthma should, if possible, consist in total abstinence from the offending food, but this cannot be done, if it is a very important or very common food such as milk, eggs or wheat. In such instances I limit the diet to one or a few food articles which have given an unmistakable negative skin reaction. This is kept up for a period of ten days to six weeks. After this other foods are added one at a time, and those which had given a positive reaction are allowed in the diet sparingly and only twice a week. Unger and other authors are more in favor of hypodermic desensitization.

In bacterial asthma specific treatment naturally will consist of vaccination with the proper bacterial proteins. This is not easy to determine, first, because the skin tests are negative as a rule; and, second, because even an analysis of sputum or nasal secretion often fails to give significant information. Many authors therefore gave up the use of autogenous vaccine and now use stock vaccines. (Rackemann and Graham).

Mason and Chandler report an interesting case in an asthmatic child. They found a positive skin reaction to pneumococcus, tho this germ could never be found in the sputum. Nevertheless treatment with pneumococcus vaccine cured the child. In such a case, of course an autogenous vaccine would be of no benefit. The most common bacteria present in bacterial asthma are streptococcus hemolyticus, staphylococcus pyogenes aureus and albus and micrococcus catarrhalis. Persistency in continuing the treatment with vaccine is important. Local reaction is a sign of good action.

In the foregoing I have tried to give a short outline of the present status of the clinics of asthma. Altho we still meet with difficulties in many instances and in many cases are unable to produce cure or bring about relief, we can be quite satisfied that the last few years have inaugurated a new era in our knowledge of this condition. We all remember the days when bronchial asthma and hay fever were considered almost an incurable condition, a veritable "crux medicorum." Let us hope that further research for the underlying cause of any allergy will be successful in the near future. Only then will we be able to reach the very root of the evil by correcting the primary disturbance, whether it be of endocrine or metabolic nature.

THE INFLUX OF FOREIGN PHYSICIANS

The United States has always been generous in its welcome to desirable physicians from other countries. The rules governing their licensure have never been as severe as those confronting an American physician who seeks the right to practice in foreign countries—restrictions which in some countries are so severe as to be almost prohibitive. Twenty-five or thirty years ago, there may have been reason for rigid measures because medical education in the United States had not reached its present degree of advancement. Then, also, the excellent medical training furnished in some centers of Europe was an added reason for welcoming the few foreign physicians who came to America. Whereas, in earlier years, the foreign physicians coming to the United States were comparatively few, the numbers have been rapidly on the increase since the World War, particularly as concerns physicians from central Europe. While only sixty-seven applied for licensure in 1919, there were 371 in 1923, and reports received since the first of the year show the numbers increasing to the proportions of an avalanche. Most of the new arrivals are unable to speak English; many are without friends and, in some instances, without visible means of support. Among them are also many undesirables, both from the educational and moral standpoint. This country is already oversupplied with physicians, particularly in the large cities, where foreign physicians usually locate, and the conditions from overcrowding will be made more serious by this influx from abroad. The examination should be in English; the rules in regard to official reports regarding credits and credentials should be applied to foreigners the same as to graduates of American medical schools, and, still more important, the identity of the applicant should be established and certified in as strict a manner as for graduates of American medical schools. There is no longer any reason why regulations for the licensing of foreign physicians should be any less rigid than American physicians have to meet in other countries. The public needs protection against the incompetent or undesirable physician from abroad no less than against the medical imposter at home.—Jour. A. M. A., April 26, 1924.

GALLBLADDER COMPLICATIONS *

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The complications and sequellae of cholelethiasis arise from two chief causes. First, inflammatory, either recent or remote; and, second, obstructive, due to the arrest of calculi, either in the bile passages or in the intestinal canal. The acute inflammatory disturbances are the result of bacterial invasion of the biliary tract, usually from the intestinal canal, and may be either suppurative or nonsuppurative. The chronic inflammations are more remote effects of the acute and consist of adhesions between the gallbladder and abdominal viscera or abdominal wall, the continuance of a fistula between gallbladder or ducts and adjacent viscera, the formation of diverticula in gallbladder or ducts, chronic cholangitis and chronic hepatitis.

In some cases of infection microorganisms of the disease pass from the circulation by way of the portal vein. They then pass into the liver and are taken up by the hepatic cells and pass from them into the biliary capillaries of the liver, the bile duct and the common duct. Thus the typhoid bacillus enters the gallbladder in case of typhoid fever. It will be seen, therefore, that in almost every instance cholecystitis is not a disease limited to the gallbladder but is one initiated by an infection which reaches the gallbladder thru the excretory ducts of the liver.

The anatomy of the gallbladder accounts for the persistence of the disease in that organ, the complex nature of its valves retaining the microorganisms after they have disappeared from the other organs. Continued growth of the microbes in the walls of the gallbladder lead to a decided change in its mucosa which becomes covered with mucous glands that penetrate to and sometimes thru the muscular layer and may produce pericholecystitis and excite the formation of adhesions to neighboring structures. The fibrous and muscular elements in the wall of the gallbladder also increase in thickness, leading to loss of muscular elasticity of this organ. As the wall disappears thru the process of scar formation, there is increasing danger of rupture, with new obstruction of the cystic duct and a distinct toxemia and complications follow.

It is generally admitted that a mild infection of the gallbladder or bile passages is necessary to the formation of gallstones. It is equally true that once the stones are formed they produce a vicious

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circle by maintaining a catarrhal inflammation of the mucous surface, thus favoring the advent of severer types of infection. Thus we can readily see how the presence of calculi in the gallbladder may be the exciting factor in recurring attacks of cholecystitis and indirectly of cholangitis. Reflexly thru the nerve supply they irritate the stomach and duodenum and produce a chronic indigestion. The adhesions which form between the gallbladder and the stomach, omentum and intestines further disturb the digestive function by impeding the motility of those organs.

In the suppurative inflammation we have all the above pathologic changes, but greater intensified and accompanied by the formation of pus. In addition there may be necrosis, sloughing or gangrene of the parts involved. A suppurative cholecystitis, complicating gallstones, has almost no limitations. It may remain localized as an empyema of the gallbladder, become walled off by adhesions and proceed no farther, or it may extend along the bile passages or lymph channels and develop a general suppurative cholangitis with all its grave possibilities. The intensity of the inflammation in the gallbladder in the presence of suppuration excites the formation of adhesions between it and the liver, stomach, intestine or abdominal wall. The tissues soften and break down, perforation takes place, the contents of the gallbladder, including calculi, are discharged into the viscus to which the fistula leads, which is most frequently some part of the intestinal canal, but may discharge externally thru the abdominal wall. Perforation into the liver leads to hepatic abscess, while perforation into the peritoneal cavity might terminate in several ways. A subphrenic abscess may develop, burrow thru the diaphragm and produce an empyema in the pleural cavity, or it may perforate the lung and discharge its contents thru a bronchus.

The complication caused by the obstruction of the bile ducts by stones vary according to the location of the obstruction and the presence or absence of a pyogenic bacterial infection behind the obstruction. A calculus lodged in the cystic duct, causing an occlusion, will occasion various pathologic changes in the gallbladder. It may become distended with bile because of a ball valve action on the stone, permitting bile to pass in but not out. With the impaction of a stone completely occluding the duct, hydrops of the gallbladder follows. There may be any degree of distension. The gallbladder may reach an enormous size. I had one case where it extended down into the pelvis and was diagnosed as a cystic ovary.

In obstruction of an hepatic duct bile stasis will follow in that portion of the liver drained by the occluded duct. Jaundice may occur in varying degrees. The intrahepatic bile passages become dilated from the retained secretions, producing an enlargement of that portion of the liver. If a stone completely occludes the common duct, chronic and persistent jaundice will occur. The duct becomes dilated behind the obstruction and may attain the size of the small intestines. Stricture of the duct, due to cicatricial contractions, following the abrasion of the mucous surface by the passage of the calculus, may give rise to chronic obstruction.

Incompetence of the heart and spasm of the bronchioles of the lung are two serious effects of simple cholecystitis, motor insufficiency of the stomach, ulcer of the duodenum and stomach, primary carcinomas in the region of the gallbladder, local peritonitis and many diseases of the liver are some of the grave results of a prolonged cholecystitis.

Pancreatitis is a frequent complication of gallbladder disease and especially so when the stone is lodged in the ampula of Vater. It interferes with proper drainage and favors the extension of inflammation thru the duct of Wirsung by acting as a constant irritant to the part.

Hemorrhage may become a grave complication of gallstone disease, especially so in those cases with obstruction and chronic jaundice. Intestinal obstruction may take place but is an infrequent occurrence. It occurs most frequently in patients beyond fifty-five years of age. The stone passes out of the gallbladder thru the fistulous opening usually into the duodenum, but may perforate into any portion of the intestinal tube. The most frequent site of obstruction is at the ileocecal valve, but it may occur in any part of the small intestines or colon.

While in this paper I may emphasize one complication, yet I wish to indicate what attitude the practitioner ought to take toward this disease. I feel that these serious complications especially emphasize the wisdom if not the necessity of early surgical understanding, or the relation between simple cholecystitis and its expression in the form of some grave complication. It is now as easy to diagnose as the early stages of appendicitis. Public opinion, however, while it condemns the surgeon who allows a case of appendicitis to develop a grave complication, is apt to condemn the physician who requires a case of cholecystitis to be drained at once in order to avoid such complication.

The two methods of drainage and removal of the gallbladder both have their supporters, but personally I prefer removal. It is my belief that, if drainage is used, the gallbladder should not be allowed to close until the Murphy method of inspecting its mucous membrane has been used, so we will know when this has returned to normal. I believe that many of the poor results of drainage fall under this error. If the operation is performed early, there are no contractions of the gallbladder and it may easily be drained in contact with the abdominal wall. It is free from inflammatory adhesion and there is no obstruction to the common duct. Finally, there is no colic resulting from tension upon the cystic duct as a result of attachment of the fundus of the gallbladder to the peritoneal wall of the abdomen.

I wish to give the history of a case with complications illustrating some interesting phases. It is well known that parotitis is a complication in pyemia and many infectious diseases. There also seems to be a relation between the parotid gland and the generative organs and an important sympathy between the parotid gland and the abdominal viscera. Cases of this are of sufficient rarity to warrant reporting in the following histories:

Case 1. Mrs. J. H., age 31. Family history negative. Past history. Had the usual children's diseases, one confinement, two miscarriages. Had a pelvic operation for pus tubes and appendectomy five and a half years ago. Wassermann negative. Had indigestion for several years and for the last few years has had several severe attacks of gallbladder colic, which required morphine for relief.

Was called to see her Oct. 21, 1921, when she was suffering with a typical gallstone colic which required one-half grain of morphine to give relief. In about twenty-four hours she was taken with another attack and was removed to the hospital. On the next day jaundice developed which became very severe. On account of this, operation was contraindicated. On Nov. 4, when the jaundice was fairly cleared, she was taken with a severe pain in the angle of the left jaw and soon developed a swelling of the parotid gland which on the 5th resembled mumps. Pain and tenderness so severe that she required morphine for relief. It was impossible to get any relief from the ice bag or hot fomentations. After a few days fluctuation developed, the gland was lanced and pus discharged. On Nov. 22 she developed a pain in the right parotid gland and also a pain in the right thigh. The swelling in the right gland did not become as marked as it was in the left but it also broke down and required opening.

During the time she was in the hospital her temperature was normal except on four occasions when it was high as 99.5 degrees and once 100.4 degrees. While she was suffering from parotid infections delirium was a prominent symptom. A smear and culture were made from the pus of the left gland, showing a diplostreptococcus infection. An autogenous vaccine was made and used first the day the swelling appeared in the right parotid gland. The wound became contaminated with the pyocyaneus bacillus. After the use of the vaccine her condition improved very rapidly and there was a marked improvement in the tenderness over the gallbladder. This improvement continued and for a time the patient felt so well that there was some hope of a cure. She left the hospital on Dec. 3, the vaccine treatment being continued for some time afterwards.

On Feb. 12, 1922, she was again taken with severe gallbladder pains and after her former experience was perfectly willing to submit to an immediate operation. A cholecystectomy was performed with drainage of the common duct. The gallbladder had an hour glass contraction about one inch beyond the cystic duct. The part of the duct next the gallbladder was also dilated. The mucous membrane of the bladder showed the strawberry appearance. It contained considerable mucus and the part next the cystic duct contained a lot of small dark particles but no stones. The common duct was dilated sufficiently to admit the little finger but contained no stones.

Laboratory examination showed the same infection in secretions of the gallbladder and common duct as were found in the parotid gland. This led me to the conclusion that it was advisable to use the autogenous vaccine, having some left that was made from the parotid gland. I also felt that it would be advisable to continue my drainage of the common duct for a long period, which I did for over thirty days. The patient left the hospital feeling well. I saw her about two months ago and she reported she was feeling perfectly well.

Case 2. Cholecystitis (posttyphoidal), complicated with double parotitis, reported by Dr. Atkinson.

J. L., age 34, was admitted to the hospital complaining of continual headache and pains in his muscles and joints. His family history was good; there was no history of tuberculosis. Scarlet fever in childhood, from which he made a complete recovery. No history of venereal infection.

About one week before his admission he began to have headaches, chills and nausea, accompanied by vomiting. The diagnosis was made and the patient had a typical mild case of typhoid fever which was treated by means of ice baths, his temperature reaching normal ten days after entrance. The spleen was palpable and there were a few rose spots. He was discharged well about five weeks after admission.

Over a year later he again applied for admission, stating that he had chills accompanied by fever, headache and pains in the back.

Examination: Face flushed, pulse 128, spleen palpable. Hepatic flatness began at the 5th rib and extended one finger's breadth below the costal margin. The muscular resistance of the abdominal wall was such that it was impossible to palpate it. Temperature ranged from 103 to 104 degrees.

A few days later there was a marked tenderness in the region of the gallbladder. The conjunctivae were slightly jaundiced. Both parotids became swoolen, the right more than the left. They were hot and very tender to pressure. No fluctuation was obtained. Three days later the gland became greatly swoolen and there was infiltration of the face and neck. The skin over the parotids was red and the gland was hard and infiltrated. Both papillae at orifices of the duct were swollen and pus was forced out.

The diagnosis was cholecystitis, posttyphoidal, complicated by double parotiditis. Later both parotids were incised, the bacteriologic examination showing a pure culture of staphylococcus.

GONORRHEA IN 1924

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To bring forward the discussion of a disease of so great antiquity as that of gonorrhea would seem presumptive, were it not that progression is the order of the day and we are, therefore, not content with past or present achievements but are striving for greater ones in all departments of medicine and surgery, directing special efforts toward improvement in our methods of handling genitourinary diseases. It is true that authorities both high and low have had their say and we have thus been led to follow established precedents, meeting with more or less success as the case may be. We do not expect to rest here for, taking it all in all, no one is ready to proclaim: Lo, I have the one and the only way to insure a quick and positive cure of the disease in question.

The common experience seems to be that under approved methods the discharge soon lessons or ceases altogether for the time being. At this stage the beginner is apt to congratulate himself upon the promptness of the cure, only to be disillusioned later. After a varying time the patient returns and complains of a slight moisture at the meatus and the exudation of a drop of pus more noticeable in the morning. The case is on again, very likely with added complications of a serious nature.

It is possible for the specific germs to find lodgement within the genitourinary tract in situations where the active agents, used to inhibit and destroy them, do not and cannot penetrate and there constitute a focus which is a perpetual menace, defying all ordinary methods to dislodge and eradicate them. Again, local conditions left by the disease or induced by unskilled treatment are responsible for keeping up a chronic discharge. These are some of the difficulties to be overcome. There are others, sufficiently formidable to make one hesitate to put himself on record as to the exact time in which a cure may be effected.

The pathology of gonorrhea was well worked out before the gonococcus of Neiser was isolated and proven. The doctrine then taught that the disease was at first local is still adhered to and treatment directed toward preventing the extension of the disease by use of germicidal agents. We have traveled far and as a result, where there was once uncertainty in the matter of diagnosis, we have now substituted exact methods and by the use of the microscope can demonstrate the presence or absence of the specific germ. In addition, by use of proper instruments, the exploration of the urethra, bladder and ureters enables us to determine whether both kidneys are functioning normally, all of which are important data, giving us a decided advantage over the available methods of former days. It does not, however, absolve us from exercising the same diligence and care that was then imperative, in order to arrive at conclusions that could be depended upon as positive and unerring.

Equipped with all the latest appliances and possessed with the necessary skill to employ them in our work, what is the showing? Upon the whole creditable. We have learned the gospel of cleanliness, the gentle touch in all our manipulations. We have come to understand the evils of overmedication and, further, the wisdom of individualizing and selecting the plan of treatment best suited to the case in hand. Is there anything more to be learned? Probably much. Forty-three years ago we did not know definitely the causative factor responsible for the disease, much less how to combat the invasion of the gonococci in the effective manner we can today. This advanced step gives us no license to ignore the work of our predecessors, tho we fortunately stand on less debatable ground as to diagnosis and treatment. According to their light they wrought well.

In a clinical lecture delivered at Charity Hospital (Blackwell's Island, N. Y.,) during the session of 1879-80, the following axiom was tabulated by one of the leading authorities. "Gonorrhea does not depend upon a virus. It is a simple catarrh of the urethral mucous membrane, due to the presence within the canal of some local irritation." Pathologically true today, but the interpretation is different. Science has dispelled the mist, and the life history of the germ which caused the "local irritation" and was responsible for the subsequent course of the disease is now an open book before us, in which all who will may read, and for this privilege we have to render thanks to the research work that has been and is now being done thruout the world.

Possessed with this newer knowledge what have we done with it? Have we applied it wisely to the end of shortening the duration of the disease, thus protecting the patient from serious complications always to be feared in protracted cases? Methods and remedial agents that have successfully withstood the test of time are with us yet. To discard them for unproven substitutes is evidence of inexperience or very poor judgment. Physicians and surgeons are apt to be impressed with the teachings of their colleges and clinics and later by the knowledge gleaned from actual experience in the field. Naturally methods may differ somewhat in minor details, tho the average results are about the same. None question the advisability of inhibiting the development and growth of the gonococci at the earliest possible moment, when it can be done without violence to the parts involved. It is to be remembered that the mucous membrane is a delicate structure and never designed to successfully resist severe traumatism. Even the milder measures are not without danger. The trained man respects this purposeful structure as one would the sanctuary of a shrine. The physician never from choice sanctions self-medication, either by syringe or irrigation, for he knows only too well that bungling and faulty technic will do an immense amount of harm. Counter prescribing is another evil that ought to be shunned. No rational being can hope by the use of one or two stereotyped prescriptions to be cured of a disease that frequently baffles the skilled physician.

We have sought long and patiently for a reliable antiseptic for local use in gonorrhea, one that does not interfere with normal cell metabolism, or come in conflict with those valiant soldiers the wandering cells (leucocytes), always arrayed and ready for defense when the need shall come. We want an agent that is specific against the gonococci. With this in mind our attention has been directed to the milder organic silver salts and their use put in practice with good results as far as they go, but they all lack "the knock-out punch" to make them really effective. Erlich's investigations served to indicate possibilities in the analine dye series. Modern chemists, continuing along where his work ceased, have given us an agent which bids fair to be the specific in question, "the big stick," so to speak. It is on trial. Many vaunted remedies come and go, the dependable ones being few in number. If to these we can add an ideal antiseptic, a true gonococcicide, it will become a powerful weapon in our hands.

Nothing is absolute. Perfection here as elsewhere is ever just beyond our reach and that in itself prompts to continued effort upon our part. Should we succeed in rendering gonorrhea innocuous, easily controlled, have we advanced the cause of more wholesome living thereby? Hardly. Saving innocent ones from contagion is the chief value to be derived from so important a discovery. It is well known that individuals, particularly the wayward ones, recovering from an attack of gonorrhea, having endured the pain and discomfort that it entails, are seldom cured of their vicious habits. The lesson is not effective enough to cause them to desist from improper sex relations. If such an experience availeth not, of what weight are mere words? Even the majesty of the law is powerless to reform. It can only punish offenders and that in no sense removes the cause or the evil resulting therefrom.

Glancing into the depths, we are deeply concerned and astonished at the large number who choose to walk in the subterranean paths of the underworld, so-called, negligent as to the upbuilding of the commonwealth, a direct menace to the developing manhood of the boys who are to make up the world's citizenship, when their day shall arrive. We are somewhat comforted to know that, standing upon solid ground, there is still a greater host well equipped who are doing the world's work. The economic loss caused by the failure of those who should be doing their part to elevate the race, instead of contributing to the moral depravity of themselves and others, is a source of national weakness we would gladly overcome.

We are not the first to undertake this formidable task of improving the morals of the degenerate ones in our midst. Preceding generations have had their turn in contending with the evil tendencies of the average human being.

The harlot has been ostracized from times most remote, yet in this twentieth century, when civilization is approaching its zenith, who can qualify to cast the first stone at her? There is a reason for her existence among all classes of society. Trying to trace it out, we discover that both man and beast are held in the iron grasp of two instincts, viz., hunger and the sexual impulse. The beast is governed by immutable laws that do not vary from cycle to cycle. Man is left largely to himself, but endowed with reason, the evident design being to enable him to control and properly use those functions upon which his existence and propagation of his race depends.

The facts are that he is far from ranking as a masterful being, when it comes to the matter of self-control. It is true that many individuals are incapable of reasoning wisely; others are reckless and indifferent; knowing the dangers they fear them not, while the very elect, those who presume to pose as our standards of morality, are not themselves immune, as proven by lapses more or less frequent. We need go no further in order to explain why the courtezan holds the field and insinuates herself into places, where we would least expect to find her, in spite of the combined forces arrayed in opposition.

What to do with the undesirables of both sexes, is the problem of the ages. We have it before us and are trying to work it out to a correct solution. We are losing ground by expending our efforts upon effects rather than causes. The medical profession is constantly dealing with human wreckage, trying to repair the damage wrought upon those who are walking in forbidden paths. The inefficiency of the present methods of controlling the social evil is not generally known. We have punished transgressors, have scattered reform literature far and wide, and just now are insisting that education relating to the sexual functions is the one thing needful to protect the youth of the land. Meanwhile the new crop of offenders is as prolific as usual.

The control of epidemic diseases has been successfully accomplished by medical science, but when we come in contact with human frailties, especially lack of will power, the case is different. To be endowed with reason, the greatest of gifts, and not profit by it leaves man without chart or compass, a derelict, useless, dangerous. The situation is not irremediable. If nature's plan were strictly followed, early marriage of the young as they come to maturity, no question of sexual perversion under normal conditions could possibly be entertained. Home and family constitute an anchorage, sure and steadfast. Nothing is to be feared. Tho the winds of adversity bear down upon the craft and the waves roll high, it will not drift into unknown waters when held by love, the unbreakable chain which cannot be wrent asunder.

In this strenuous age, when the struggle for mere existence has become so intensified and cruel, the youthful home-builder needs a helping hand. To this end why not take a portion of the money expended in the universal hunt for evil doers, and turn it into a fund to stimulate industries, whereby our young men can find steady employment at a living wage, and thus be enabled to rear a family, as every true man should aspire to do. To those who are fitted to stand at the marriage altar pure and undefiled, the vision of a happy home becomes a living reality. Those who participate without this fitness, perchance wayward and world wise, are doomed to an uncertain future.

Youthful follies must be atoned for in later life. The truth of this statement admits of no denial. Let the skeptic, if there be one, stand but for one hour in the venereal clinic of any of our cities, and witness the revelations unfolded there. The endless procession of men and women from all classes and conditions in life, even children under the curse, all seeking relief from the penalties which make life a burden, is surely a picture more convincing than any word painting can possibly be, a picture upon which innocent ones ought never to gaze or know that it is in existence.

The physician is necessarily familiar with all the phases of life. He enters the homes of the affluent and knows the ones in which the skeleton in the closet abides. He walks among the outcast and the lowly, and from his hands they receive all the help science can give for their bodily ills. His great heart is touched by what he sees and it often prompts him to contribute material aid as well, when the need is great. Should they long for a spiritual advisor, he becomes the monitor and guide. He does not hesitate to reach forth his hand to those in the depths and assist them to stand upon their feet and turn their faces toward the light and, in the familiar words recorded in the story of old, bids them "go and sin no more." Those deeds of mercy are part of the day's work; they are not recorded on the printed page; there is no attempt at selfagrandizement; it is simply a duty done.

SILENT FOCI OF LOCALIZED OSTEOMYELITIS

According to D. B. Phemister, Chicago (Journal A. M. A., April 26th, 1924), localized osteomyelitis (aside from a pocket about the root of a tooth) may begin silently and proceed to the stage of complete destruction of the bony area involved. with surrounding new bone formation, before there are any local symptoms whatsoever. This condition is rather astonishing when met with for the first time. It is apt to be found in patients in whom some focus of bone infection has remained active. The subsequent lesions may develop at any time, up to two or three years after the onset of the initial bone infection. There may be mild general symptoms in the absence of local symptoms, and the possibility of a silent focus should always be kept in mind when a patient with chronic pyogenic osteomyelitis presents the picture of a low grade infection, which is too severe to be explained by the findings at the seats of the known lesions. A recurrence at the site of a previous osteomyelitis may begin without local symptoms, and may proceed to the point of extensive absorption before pain is experienced. However, there may be mild general symptoms of infection, such as slight afternoon fever, malaise and lack of energy. The foci may exist for weeks or months before producing local symptoms. This has been shown by the extent of the lesions revealed by roentgenograms taken either before or immediately after the onset of local symptoms, and by roentgenographic observations of symptomless foci over long periods of time. Three cases are cited in which there were multiple silent foci, and various pictures of the condition were presented. In the first case of the eight bony foci which developed, apparently secondary to the primary osteomyelitis of the spine, two had made slight local symptoms for some time, two had produced pain for a few hours, and four had produced no local symptoms or signs before detection by means of roentgenograms showing evidence of bone destruction and proliferation.

PACIFIC NORTHWEST MEDICAL ASSOCIATION MEETING.

THE FORTHCOMING CONVENTION

By this time every medical man in the Pacific Northwest has received notice of the third session of the Pacific Northwest Medical Association, to be held in Vancouver, B. C., June 26-28. It will present some features of unusual interest. This number of NORTHWEST MEDICINE is a Vancouver number, and on the following pages readers will find descriptive articles, giving some idea of the city and the Province, of which it is the metropolis.

The committee in charge of the program has been exceptionally fortunate in securing men of international fame to address the meetings. The United States and Canada are well represented and in addition several famous clinicians from Great Britain will speak. The session is essentially a general practitioners' meeting. The range of subjects is wide, but every paper deals with questions directly affecting the man in general practice, to a degree unusual in the average medical meeting. The usual divisions into sections will not be made, and the program is so arranged that each man can take advantage of practically every paper. One would hardly wish to miss any of the addresses on the list as at present outlined.

Especially noted, perhaps, will be the addresses by Dr. L. G. Rowntree, of the Mayo Clinic, who has done such important work on "Liver Function" which forms the subject of one of his papers; the special lecture on "Tuberculosis," by Prof. S. Lyle Cummings, of Cardiff, Wales, one of the foremost living authorities on disease; and the paper by Dr. Horst Oertel, of McGill University, on the "Relation of the Pancreas to Diabetes."

The setting for the convention is also noteworthy. The city of Vancouver is rapidly acquiring an enviably reputation as a convention city, and there are numberless opportunities for enjoying a delightful holiday. The headquarters of the convention will be in the Hotel Vancouver, a worthy host to a great gathering. This is one of the finest Canadian Pacific hotels. It is in the heart of the city, and in easy distance of all important points of interest.

MEDICAL HISTORY

The earliest mention of medicine and the treatment of disease in British Columbia is contained in the official reports of Capt. Jas. Cook, of the British Navy, who visited the shores of the North Pacific in 1778, and carried with him aboard his vessels ship's surgeons. In fact, William Anderson, surgeon of H. M. S. Resolution, died of tuberculosis and was buried off the coast of Alaska. During the later voyage of Capt. Vancouver, there is also mention made of doctors, and Menzies was not only the surgeon but naturalist of the expedition. The beautiful arbutus tree bears his name.

For many years records trace no names of medical practitioners in the territory, but in 1850 John Sebastian Helmcken, a surgeon, came to Victoria, at the instance of the Hudson Bay Company. He was wont to claim that he was the leading doctor from San Francisco to the North Pole and from Asia to the Red River of the North. His claim was true, for during many succeeding years there was no other doctor in all that area. He proved to be a valuable man to the pioneer country, not only in his professional work but in general good to mankind. He was elected to the first government, which was formed in 1855, of the then small colony, being appointed speaker, which post he held for several years.

In 1866, the first register of physicians and surgeons in the Province was made. This formed the nucleus of the present organization. Thirty-three names completed the roster, among them being many men who have had much to do in shaping the destiny of the country and thru whose efforts much of the progress, not only in the realms of surgery and medicine, but in the industrial and financial life of the community, has been made.

No account of medicine would be complete without reference to Drs. D. Bell-Irving and H. E. Langis. The latter was one of the earliest medical men coming to British Columbia in 1884. His reminiscenses have often been quoted. He arrived as a surgeon for the Canadian Pacific Railway, then in course of construction, and was prominent in the early medical history of Vancouver. He came to Granville, what is now Vancouver, in 1885 and found Dr. Beckinsgale practising. Subsequently Drs. W. J. McGuigan and L. M. LeFevre arrived and, when the city of Vancouver was incorporated in 1886, these comprised the medical workers in the young city.

Dr. Duncan Bell-Irving had been here for some years previous but about this time had taken a trip to the West Indies. He afterwards returned and for many years practiced, latterly interesting himself in projects other than medicine.

Dr. W. Walkem was also another pioneer medical man. He had come to the site of Vancouver in the early '80's but removed to Nanaimo and there remained for many years. At one time he was elected to the legislature, in what is described as one of the quaintest campaigns in the political history of the Province. Without a committee, without printing a piece of literature, and without hiring a hall he was elected by a substantial majority over other candidates. He did, however, make a personal call on every voter in his district, which aided by his wide personal knowledge, his popularity and the fact that he had attended to many of the voters professionally, is said to account for his election.

The first hospital records show that at the inception of the City Hospital, in 1888, the following doctors were members of the staff: Drs. D. Bell-Irving, J. T. Carroll, H. W. Langis, J. M. LeFevre, W. J. McGuigan and A. M. Robertson. It is interesting to note that of this number Dr. McGuigan, after several years service as an alderman, was elected mayor of the city and in the capacity served well and faithfully. Dr. LeFevre became interested in several financial concerns, notably the B. C. Telephone Company, of which he was afterwards a director. The development of this utility was partially thru his instrumentality.

Among others of the profession who became makers of laws were Drs. Trimble, Powell, Davie, J. Ash, H. Watt, R. E. McKechnie, J. H. King, Geo. L. Milne. Dr. H. E. Young was also one of earlier medical men of the Province who rose in the ranks of statesmen. To his farsighted policies the building of the mental hospital is due. He is at present the head of the Provincial Health Department.

Other medical men than those mentioned have played important parts in the upbuilding of the city and Province. Often departing from their chosen avocation, they responded to calls in community life, assisted in securing better and more humane legislation, in educational matters, in civic affairs and ably proved that men of education and attainments can show their versatility and energy for the betterment of ideals. The history of the profession in the Province of British Columbia and the City of Vancouver is one of which every citizen is justly proud, and worthy of the traditions of its high calling.

VANCOUVER GENERAL HOSPITAL

The Vancouver General Hospital has a particularly interesting history, having progressed from being the small city hospital, at the time of its incorporation in 1902, to the present large, modern institution of 900 beds. The period of its active development commenced with the move from a down town site in 1906 to the present location in Fairview. Since that date the number of patients treated has been equivalent to the whole present population of the city of Vancouver. It is incorporated as a General Hospital, under the laws of British Columbia, government being vested in a Board of Directors, of whom three members are appointed annually by the city council, three by the Provincial Government, one by the attending medical staff, and eight are elected from the body of Governors. By a recent amendment to the Hospital Act provision has been made for one appointment for the adjoining municipalities.

From the wide field, so represented, has been brought to bear on the affairs of the hospital unusually keen and practical direction and judgment, a condition which has been largely responsible for the high reputation which the institution bears in the community.

The hospital is financed by an allowance from the Provincial Government, one from the city, by fees received from patients and from donations and bequests. In the past the institution has been handicapped by the lack of endowment funds which would enable it to meet those annual deficits for maintenance, which have been inseparable from operation under conditions increasing the cost of living. At no time has there been any deviation permitted from the conception and application of a high standard of hospital service and, in point of fact, there has been a heavily increasing expenditure to provide the most up-to-date facilities for the scientific medical care of its patients. On the strength of the work it is performing, and its past record of achievement, a successful appeal has recently been made to the public for a fund which may be held intact as endowment, and from which the income derived may be applied for purposes approved by the trustees.

The hospital holds an enviable position among the foremost hospitals on the continent, and has received the highest rating from both the American College of Surgeons and the American Hospital Association. In the more recent general movement for the improvement of hospital facilities it has played a not inconspicuous part, this feature of the hospital history being intimately associated with the name of its former Superintendent, Dr. Malcolm T. McEachern.

While the constituency which this hospital represents is sufficiently large to result in approximately 50 per cent of the whole public ward work for the Province being carried out within its walls, the more local aspect of its operations makes it a public institution peculiarly of civic importance. Of the total of 13,394 patients treated in 1923 (273,884 days' treatment) nearly 9,000 were derived from the city itself, and another 2500 from the municipalities immediately adjoining. These figures point to a responsibility shouldered on behalf of the community which is very great, and has become increasingly so, coincident with the development of the city. At the present time the actual bed capacity barely serves the needs of the community, especially when cognizance is taken of the fact that infectious disease has more recently almost assumed the proportions of an epidemic. The accommodation for these diseases is that which was built and provided by the city some years ago and is administered by the hospital.

In the matter of hospital mortality, it is a matter of note that the net death rate has declined by 26 per cent in the last ten years. The hospital is an "open" one in the general sense of the term, but also has an honorary attending staff whose members are appointed by the Board of Directors on the nomination of the Vancouver Medical Society. All departments of medicine are represented in this selection, which ensures the indigent patient who applies directly for relief the same skill and care which all others receive. A recent reorganization of the staff has resulted in a harmonious and successful service, with a most efficient administration of both out-patient and in-door department. By arrangement with the Provincial Health authorities the work for the city carried out under the provisions of the Venereal Diseases Act is associated with the institution. The laboratories of the hospital derive assistance from both civic and Provincial grants and are responsible for various features of public health work. These affiliations make the interests of the hospital exceedingly broad, and result in more than one phase of its work being constantly a consideration, when the health problems of the community are considered.

Vancouver General Hospital

Educational effort made by the hospital principally centers in the excellent Training School for Nurses, the total personnel being 275. From this school, which also accepts pupils from smaller provincial hospitals for completion of third year training, have graduated over 500 nurses. During the year 1923, one hundred and seventeen pupils (so rapidly has the work of nursing increased) were entered in the school on probation. It is recognized by, and affiliated with the University of British Columbia in respect to a special course of training, covering five years instruction, which confers both a hospital diploma and degree B. Sc. in nursing, on the successful student. From time to time as occasion demands a curriculum of instruction for orderlies has provided a practical course for these employees with most beneficial results. Instruction is also regularly carried out in laboratories, physiotherapy department and Infants' hospital, the latter department undertaking the training of young girls as nursery maids.

The work of the hospital is general in the widest sense, the services covering medicine and surgery, with their specialties, maternity, children's, infant's and infectious disease. The out-patient department cares for an increasingly large number of patients, all of whom receive free treatment, but whose inability to pay for proper medical attention must be apparent to the Social Service Department investigator supervising the admission.

The following special departments are maintained: Physiotherapy, electrocardiograph, x-ray and laboratories, and in each an ever increasing amount of work is recorded. The pathologic laboratory has been specially sited, close to the main operating suite, and affords the most up-to-date facilities for tissue diagnosis. The biochemist and dietitian are cooperating very successfully in the application of an approved technic for the treatment of diseases especially affecting metabolism. It is gratifying to record the very good results obtained in diabetic cases, since insulin has been available. A new laboratory has been provided the radiologist, whose department and facilities should now be the equal of the best in Canadian hospitals.

Its own trained staff of anesthetists is employed and it has an interne staff, consisting of both graduate and undergraduate members. In regard to the latter it has applications with medical schools which require the completion of a final year of hospital work as a prerequisite to graduation. The operating rooms for both general and special surgery are well planned and furnished and enable the practice of the most approved procedures. Knowing neither creed nor class, it has always been the object of the hospital to treat all who applied for assistance, and that it has been able to do this successfully and maintain its place among the foremost hospitals is evidence of the very excellent spirit which has animated the work.

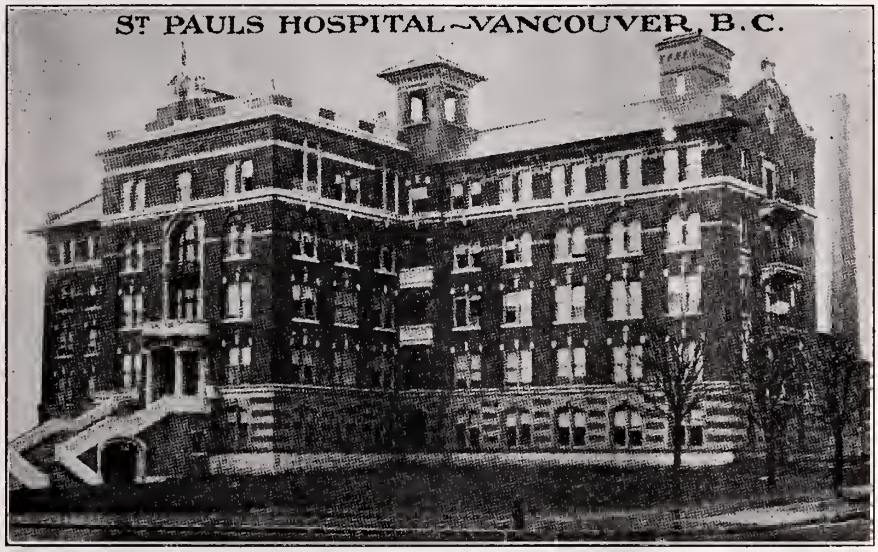
ST. PAUL'S HOSPITAL

St. Paul's Hospital is one of the great chain of hospitals and institutions for the care of the sick and destitute, which are under the control of the Roman Catholic Church in the United States and Canada, and which are so well known and so admirably conducted in nearly all of the large cities of these countries. Rated "Class A" by the Hospital committee of the American College of Surgeons, it is excellently equipped to handle any class of medical, surgical or obstetric work.

This hospital is under the direct control of the Sisters of Providence, whose Mother House is in Montreal, from which centre all of its institutions in the United States and Canada are administered. The order controls one hundred and five houses, not all hospitals, some of them being educational centres, and centres for the care of incurables and destitute persons. This Mother House was established in 1843, and is one of the well known landmarks of Montreal. Over three thousand Sisters belong to the Order in North America, and they act as heads of departments thruout its institutions.

Admirably trained and entirely devoted to their work, these women are a credit to the Church to which they belong, and have done yeoman service in building up the country in which they work. They are invariably the first to carry hospital service into all new territory, no matter how wild and full of hardships. Thus they opened a hospital in Nome during the gold rush. This has recently been closed, but there is still one of their hospitals at Fairbanks, Alaska.

Providence Hospital, of Seattle; St. Vincent's, of Portland; and Sacred Heart, of Spokane, are sister institutions of St. Paul's in Vancouver. Yakima, Walla Walla and Olympia in Washington; Missoula, Montana; and Medford, Oregon, all have houses controlled by this Order. Other hospitals in British Columbia are found at New Westminster and Cranbrook. This is not the only Order operating hospitals of this kind, but it is probably the largest and most influential.



St. Paul's Hospital

St. Paul's Hospital in Vancouver was established thirty years ago, shortly after the city was rebuilt following the great fire. It was then a frame building with some hundred beds, and for many years did admirable work, especially among the loggers and miners of the coast. A familiar sight in the logging camps during the summer months was a pair of Sisters who were sent out by the hospital, and who traveled by boat from camp to camp, offering yearly tickets for sale to the men in the camps at a cost of $10.00 each. These tickets entitled the holders to free hospital care when sick or injured, and these were taken advantage of by thousands of men yearly. The coming into force of the Workmen's Compensation Act made this unnecessary, and the logger and miner are now taken care of in other ways. The hospital has a contract with the Government of Canada for the care of sick and disabled sailors, and here they receive excellent care and attention.

In 1912 a modern stone and concrete wing was erected and will be added to at a future date. The present hospital contains two hundred and ninety beds, and has a staff of one hundred and ten nurses. All departments of the hospital are unusually complete and up to date. They include a very fine x-ray plant, where radium therapy may also be obtained. The operating section is one of the best to be found anywhere, and was brought to a very high degree of efficiency under the administration of Sister Charles, who unfortunately became ill and had to leave. She first introduced into Vancouver the compressed air method of ether anesthesia, and devised a very compact and simple machine for its use in large or small hospitals. This is now known as the St. Charles machine and is manufactured for general use. An excellent technic is observed and a high standard enforced in the operating room.

The hospital itself is well run and comfortable. There is a kindliness and warmth about the institution that endears it to the public. The Sisters are excellently trained nurses, especially selected for their particular position on the staff. There is a very good training school attached to the hospital and a graduate of St. Paul's commands the highest respect from the profession.

CHURCHES AND SCHOOLS

Vancouver, in addition to having scenic beauties to offer visitors, shows the true stability of her position by the type and construction of her public buildings. Beside the two hospitals which have been described there are many interesting and substantial public edifices thruout the city.

Churches in Vancouver

Churches of every denomination and creed rear their spires from the heart of the city to its outskirts. Some are pictured here, but there is one not shown which to a visitor offers a distinct change from ordinary places of worship. One has been so accustomed to seeing religious buildings built of sturdy stone, or draped in sombre colors that the mind without vision can scarce comprehend a wooden structure gaudily decked in vivid green and trailing yellow, where it is necessary to leave one's footwear outside before entering. Yet in Vancouver such exists. It is the Sikh temple on Second Ave. west, and an interesting spot for tourists who have a penchant for cults and rituals differing from the ordinary. There the Hindoos worship with all the fervor and devotion that even the most strict Christian could demand.

Educationally the city is well served. It is the site of the University of British Columbia which at present is housed in a temporary building not far from the General Hospital, but whose future home (now under construction) will be in an admirable spot at Point Grey, with charming vistas of sea and mountain. There are three faculties, arts, agriculture and applied science. No school of medicine has as yet been started in its connection, for the University is the youngest one in Canada. Despite its handicap of youth there are enrolled this year 1,308 students which makes it rank in fourth place among the higher educational institutions of the country.

The city maintains an adequate system of primary schools and this term there are 17,222 pupils registered in the grade schools of the city with 2,686 high school students attending the various places of instruction. In addition to these there is maintained by the Provincial Government a normal school.

A CITY OF HOMES

Vancouver is essentially a city of homes. Her mild climate, coupled with other advantages, has induced many people from the colder regions of Canada and the British Isles to come here to settle. Most of these have some small means of their own or else are in lucrative positions, and the insistent desire which seems to actuate the average man to own his own plot of earth is responsible for the fact that estimates state nearly 55 per cent of the houses in Vancouver are owned by the occupiers. Vancouver proper is, of course, the older settled section of the community, but around her have grown up small municipalities, where people have moved and built their own residences.

Point Grey, a choice section, is populated by people who have for the most part built their own homes and who take a pride in the upkeep of them. Shaughnessy Heights is the show place of the city so far as residences are concerned. Here the houses are palatial in appearance, with handsome well-kept grounds about them, with paved, boulevarded streets winding in and around. But other sections of the city while not so prominent give their quota of owners. Burnaby is a section where small plots of ground either used for small fruits or chicken ranching are the order, and many hundred pretty bungalows are there to be found. Kitsilano another section, close to the down town section, is practically all built up and offers and interesting view in summer with its tended gardens and neat appearing plots. South Vancouver is more or less the home of the working man. Here smaller but substantial homes are to be found, some with small acreage, some without, but all showing the pride of the occupier who delights in keeping the places spick and span.

The fact that Vancouver is a city of homes rather than houses tends to bring about a spirit of contentment among her population and a certain percentage of that elusive but greatly-to-be-desired community spirit. It demonstrates, too, the stability of her people who have shown their faith in the future.

Homes in Vancouver

CAPILANO

When in the early days the few hardy pioneers settled on the site of what is now Vancouver, it was with, perhaps, little vision as to the future from a scenic standpoint. They realized its proximity to water, its geographic location, its logical situation as a shipping point but, wrapped in their desires to hew from the timbers a home and fortune, little reckoned of the thousand pleasures which would be the heritage of those who came after them.

Therein is one of the features of the city, the ready accessibility from city streets to places of entrancing beauty, such as is pictured here. Capilano river is a turbulent mountain stream which arises in the watershed north of the wall of mountaneous country that protects Vancouver from cold northern winds. Its earlier beginnings are in small streams and a lake known as Palisade whose waters are fed from ice cold glaciers and tarns. It then wends its way around the crevices and valleys of Crown and other mountains, till it reaches the narrow lichend canyon, thence to the sea which it meets just at the entrance to the harbor. It is a favorite spot for the citizens of Vancouver, as well as for the many visitors. Theeverchanging hues which are to be found along the length of the river bed are a thing of beauty the year thru, a dozen pigments of green, punctuated with sombre greys and browns of rocks, and lighted intermittently by brighter splashes of color from a half hundred varieties of wild flowers lifting their heads thru the darker shades. Rare, rich ozone, filled with the spice of evergreen trees, rises to tingle in the nostrils, while the laughing water of the stream chortles its way across rocky stretches or bubbles in the narrow reaches.

Capilano Canyon

Perched high along its banks, and within easy walking distance of a street car line, is a rustic tea house, and nearby the wavering suspension bridge is shown. There's many a thrill for the venturesome person who cares to test his agility in walking across the little structure, which, suspended by cables, sways and gives with every step, while below the waters rushing pell mell seem to call with siren voice.

Capilano is but one of the streams which empty into the salt water along the stretch of the north shore. Further east two more creeks offer just as wonderful scenery and just as enchanting vistas. Lynn creek is a boiling rivulet, wrere foaming waters twist and turn thru narrow rocky spaces that broaden out into swimming pools, while Seymour creek also presents many an interesting nook and cranny to invite the heart of a nature lover. Furthereastward, reached only by boat, is the north arm of the Burrard Inlet, a rock fjord of wondrous beauty, stretching up into the very heart of the mountains. At its head, close by a well appointed hotel, there is a fall, named the Spray of Pearls, which is a favorite spot for visitors who delight in fantastic effects and wild primordial views.

PACIFIC HIGHWAY

To every child, surely at some time has unbidden come the wish to own the magic carpet of Bagdad, the seven leagued boots, or the fairy wishing cap that form the basis for so many tales in Grimm, Anderson or Sinbad. The modern counterpart of any one of these magic things which annihilated the concepts of time and space has not been actually invented, but with the advent of the airplane and motor car, perhaps something as near as human hand can invent has been produced. The airplane, whatever its future may be, has not yet reached the realm of practical possibility for all classes of people, but the motor car surely fills the childish desires as well as can be expected. The average man in ordinary circumstances nowadays has a motor car and is enabled to flit from place to place, as witness any of the highways that traverse the land.

Good roads have been the result of agitation on the part of motorists principally; of that there can be no gainsaying. Their earnest efforts have produced most of the paved highways that stretch for many hundred miles thruout the length and breadth of the continent, but it still remains for the Pacific Coast to boast of the longest paved ribbon of road in the world, Pacific Highway. With the exception of about a 100 miles in two small stretches, the highway which skirts the Pacific ocean is paved the entire length from Tia Juana, Baja, California to the cool evergreen canyons of British Columbia. Along its length of nearly eighteen hundred miles it is claimed there is more scenery than upon any other similar road in the world. Sniffy eucalyptus and pungent mangoe trees shade its path as it winds from Tia Juana beside the shimmering ocean to San Diego. Thence it threads its way thru the orange groves and sunlit areas of California by Los Angeles, Hollywood and San Luis Obispo up to Oakland. From there along the valley of the Sacramento, the city of the same name, and northward skirting glorious Mount Shasta and into the wooded valleys and fertile farms of Oregon. Here the aspect changes and from tropical vegetation, as it winds its way beside purling mountain streams, Pacific Highway offers fretted sky-line with snow haloed peaks blent in almost indistinct lines of whitey blue. From every hillside multicolored shades of greens and browns prove kaleidoscopic, while verdant valleys alive with color stimulate the imagination and please the eye. Vast mountain crags rear their heads in eternal snow, while just outside Vancouver, near its northern terminus, is a scene that for colorful effects would require the hand of an artist to depict. Sea and mountain, valley and plain, in succeeding grandeur array themselves, until finally, when the pavement stretches out into a disappearing curve, the waters of the Pacific mingle with the mountains and trees in seeming endless empurpled distances. Hazy, indistinct rise the hills, in browns and reds, in saffrons and greens, that tempt the brush of an artist and inspire the layman, while close beside the blue sea water, sparkling, cool, inviting, breaks against the side of the road. Totally different from anything else in the world is this northern end of Pacific Highway, and one of the features of it is that close beside is Vancouver with comfortable hotels, and modern conveniences.

Evergreen Canyon, Pacific Highway

SPORTS

When Captain George Vancouver sailed into the Puget Sound area in 1791 to avenge an alleged insult to the British flag, he little dreamed that a city would be named in honor of his memory. He little dreamed that, upon the site of where some of his men landed, would arise a thriving busy metropolis, whose people not only would be given to business and the marts of trade but would be like himself, a lover of the great outdoors. Yet that is a seeming heritage which he bequeathed to those who now inhabit the shores of English Bay.

Climate, environment, and proximity of suitable places for outdoor activities have induced the citizens of Vancouver to be greatly interested in athletics. Naturally, aquatic sports play no small part in the outdoor life of this community. Sailing, motor boating and kindred forms are enjoyed nearly the whole year thru, while fishing is a daily pleasure for those who delight in pulling firm fleshed trout from the streams. The accessibility of various streams makes for easy traveling, while to the northward are hundreds of tiny rivulets and tarns, situated in the mountains and fed from the icy sides that invite the ardent fisherman to cast in their virgin waters.

Big game shooting is also to be had. Not so close to the city as the fishing, but only a few miles up the coast in the rocky ledges of the ranges there are bear, mountain sheep and goat, while cougars can be obtained, if the nimrod chooses to go further inland. Deer, of course, are in abundance.

View of Vancouver's Golf Links

Other forms of athletics are indulged in, too, mountain climbing being one. With the nearness to the city of the huge back drop of crags which overlooks the streets, it would scarce be expected that there would be no lure to the Alpinist. Stretching away for hundreds of miles from Vancouver steep sides and glissading moraines tempt the hardy mountaineers and almost every week end there leave the city parties who cross the Inlet and spend happy days among the flora of Grouse, Crown or Dam mountains, which are within easy access of the city.

Golf is played every day in the year and the city boasts of six courses with a municipal links in preparation. Football is a favorite sport and is played thruout the winter months, while tennis, lawn bowling and every game is enjoyed by old and young. The latter have been recently catered to in the formation of a series of playgrounds which have been financed by the Gyro Club of the city. These are supervised by instructors and here in safety, away from the streets, the youngsters of the city may enjoy the games and devices which have been placed for their pleasure.

HEALTHY VANCOUVER

Vancouver claims to be the healthiest city on the American continent, if not the whole world, in which to be born. The death rate for infants under one, in 1923, was 48 per thousand of population, which authorities claim is a record.

Statistics may not be particularly interesting, but the following give some food for thought. The rate per thousand for increase of births of over deaths in the same year was 14.44, while the actual figures for general mortality was 10.9 per thousand, which figure included a large number of persons who on account of climatic conditions had come here seeking health. If the actual residents only are taken into consideration, the rate was 8.25, including Orientals who have a larger proportionate rate.

Landing a Big One

Obviously there must be some reason for this remarkable death rate. Some say one thing, some another, but the average citizen if asked would make reply in the words of the decrepit story, "Climb it, my boy, climb it."

While weather may have much to do with the healthy conditions which prevail, other cities with salubrious climatic conditions do not always compare favorably and, therefore, other factors must enter into the matter. Pure water in plenty, forced by gravity over filtration beds; water clear and cold from glacier fed streams is obtainable in all sections of the city and its suburbs. It comes from two different mountain sources which upon analysis show an organic residue of 1.18 per cent, while parts per 100.000 of the following chemicals exist: Chlorine .261, free ammonia .0010, albuminoid ammonia .0028, nitrogen as nitrates .063, nitrogen as nitrites none, and with no reaction whatsoever.

Vancouver is also fortunate in having contiguous to her boundaries a productive farming area in the fertile Fraser valley. Rich alluvial soil, which grow slush grasses and vegetables, permits dairying to be successfully carried on. The result is a supply of pure milk from inspected herds which after being centralized in modern plants reaches the consumers little more than twelve hours old. So, water free from harmful germs, milk free from bacteria, both became factors in health of the city.

But the glorious tempered climate must be taken into consideration. Situated as Vancouver is on an arm of the Pacific, surrounded on the north and east by mountainous barriers, she is protected from severe extremes of heat and cold. The westerly winds and waves are tempered by the Japanese current and the mountains form a protective cushion from the blasts of north and east.

Hotel Vancouver and Court House

Rain in the winter takes the place of frigid blasts. These months are not a time of dread or the shovelling of coal and ashes. The temperature varies but little during the three months and the mean average is in the neighborhood of 38 degrees. Spring comes early. In fact, in January the first of the pussy willows bud forth and thru the lazy days of February and March various early flowers burst into bloom. In April and May a riot of color is visible in the many gardens, where crocus, daffodil and tulip vie with each other, giving the appearance of a kaleidoscope.

Summer temperatures are healthy. Rarely does the mercury rise above 80 degrees usually in and around 70 with a plentitude of sunshine, and a distinct dearth of stinging pests.

STANLEY PARK

Comparative adjectives seem futile, and fitting superlatives become exhausted too quickly when endeavoring to tell of Vancouver's wonderland of nature, Stanley Park. Virgin forest, tangled wildwood and giant trees, snug nooks in arboreal settings, shaded walks where sunlight weaves elfin traceries beneath the feet, and glorious green lawns with scented rose gardens, all cause the visitor, endeavoring to see everything, to lose some of the beauties which peep from every cranny and corner.

As a sight seeing asset to the city it is without precedent on this continent, for no other park combines the identical features. Formal gardens, nurtured by trained horticulturists, abound in many spots thru the 1000 acres which comprise the park. Paved roads traverse it, running from delightful picnic grounds and sun-swept bathing beaches, into thick evergreen labyrinths, while from half a hundred angles the pedestrian is enticed to divert his walk by tortuous paths that lead to inner parts. A half mile distant is a throbbing busy city; from any corner can be seen the harbor alive with shipping, yet in a few minutes from all these things which speak of man and his handiwork, it is possible to find oneself in a forest as primal as it was 800 years ago. There is a lure to that, for the transition from teeming city streets to solitude and quite forest grandeur in a few moments is not easily accomplished in modern times. But in Stanley Park there are many places, quiet, subdued, where the only noise which intrudes is that of wind swept boughs, of twittering birds, of chattering squirrels, and these spots offer the silence of solitude, equalled only in the vaster and wilder places far from human habitation. Here, too, the air seems different. Rich in woody smells and tangy with the salt of the sea it revivifies, galvanizes and stirs the mind. Cathedral-like aisles with trees for columns rise in towering height, sunlight sweeps down in lacy patterns and a sense of awe creeps over the visitor, engendered by the smallness of everything human, as compared to the simple magnificence of the deeper portions of Stanley Park.

Many other things there are to interest as well. A seven mile motor road winds its way around the area, and along this route a thousand different angles of life and motion appear which add to its charm. From several places the mountains across the bay seem to come down in close touch, while at Prospect Point overlooking "Lion's Gate," the ships sailing to the Orient, India or the South Sea Isles sweep past so close, the illusion of touching them is almost perfect. There is, as well, a zoo of native animals and efficient tea house in Swiss Chalet style, which overlooks green sward and stately trees, interspersed with gorggeous blooms in profusion. Wild flower rockeries, where in shaded depths tiny little-known blossoms hide behind rocks, and sheltered from sun and wind give forth their fragrance, even as they did before being transplanted. Roseries, with almost every recognized color and type of flower in blossom, dot the landscape, all sentinelled by towering fir trees, hundreds of years old, whose boughs swaying in the wind sound symphonic. The late Elbert Hubbard, in writing of Stanley Park, gave one of the best descriptions that has been penned, and closed with the following words which are perhaps as fitting as could be:

"There are parks and parks, but there is no park in all the world which will exhaust your stock of adjectives and subdue into silence like Stanley Park, Vancouver."

Cathedral Isles, Stanley Park

Shaded Drives, Sanley Park

BEACHES

Sea bathing to many is efficacious. To the majority of people it is a stimulant, and Vancouver is fortunate is being situated where this form of exercise and pleasure can be enjoyed to the fullest extent. Old and young enjoy the waters of English Bay from the extreme end of Point Grey, past the shining sands of Spanish Banks, across the bay on the rolling foreshore of Stanley Park, almost any place where the waters leave the shore.

From early May until late September the beaches of the city are thronged every day, and there are certain souls, more hardy and adventurous than their fellows, who insist that even in the colder months the waters have a distinct exhilarating effect,. and would not miss their morning dip, no matter what the temperature. They are, however, in the minority, altho for many years one lady, now over seventy, has taken a daily splash at English Bay beach.

Wild Flowers Rockery

English Bay

English Bay beach was the first one opened up many years ago, when the citizens wended their way thru woods to the shore, but now it is but ten minutes walk from the principal streets and close to the West End residential section. The exit from Stanley Park is close by and many thousands use this spot for their sea bathing during the summer months.

Contiguous to picnic grounds in Stanley Park itself are two beaches, both with a back ground of wondrous fir trees and gardens. These are the favorite haunts of many, who after a pleasant afternoon in the woods partake of a swim in the cool refreshing waters. Across from English Bay beach a large tract of foreshore is constantly used. This is Kitsilano beach, and a picnic ground adjoins it. All these mentioned are under the supervision of the city and life guards are stationed there during the months when they are patronized most.

Further west along the sloping shore is Jericho beach, a delightful place, where hundreds of picnic parties are held, while just beyond this, stretching for nearly two miles beside a motor road and backed by glorious woods and glens, lie Spanish Banks. This beach is a long sweep of sandy shallow shore, where the tide is warmed, as it rolls in over sands that have absorbed the sun's rays. These six beaches are assets to the city of almost inestimable value. They are the resorts of the people who make steady use of them and contribute in no small measure to the health and pleasure of Vancouver citizens.

THE LIONS

Mighty and majestic, in snow tipped serenity they stand The Lions of Vancouver. Summer's heat nor winter's snow, the glare of sun nor the silver bath of moon change one white the outlines as seen from the city streets any day. They stand immutable, adamantine, the twin children that watch the destiny of the Pacific and guard Vancouver.

At least, that is what the delightful Indian legend, translated by the Indian poetess, Pauline Johnson, says. Aboriginal children from time immemorial heard it, and from tongue to tongue the word has been handed down, only to be retold in English by the poetess. She tells in her own inimitably way the story as repeated to her by Capilano Joe, the chief from whom she learned much of the folk lore of the tribe of Squamish Indians. The peaks called by the white man Lions are not known as such to the Indians, who have for generations named them "The Two Sisters."

The story deals with the coming into womanhood of twin daughters of a chief of the tribe in bygone years. His tribe was at war with other Indians in the same spring that his children should come to their majority. It was a time for feasting and accordingly the tribe ceased their warring and, bow-ing to the ancient custom, the daughters were granted the right to make any request they chose. To the surprise of their father and the tribe, they asked that the defeated warriors of the tribe to the north be invited to the great potlatch. Feeling that he could refuse them nothing, the chief sent forth his invitation, and only tradition tells of greater feastings and dancing than were carried on during the ensuing days.

So pleased was the Sagalie Tyee, or god of the Indians, with the girls who had caused the war to cease and peaceful methods to prevail, that he said, "I will make these young-eyed maidens immortal." In the cup of his hands he lifted them up and set them in a high place, for had they not brought forth the twin offspring of Peace and Brotherhood. So there they stand, as they have for countless ages, while the swirling entrance to Vancouver's harbor lies just beneath them, appropriately named "The Lion's Gate."

The Lions that Guard Vancouver

SIWASH ROCK

Medicine and religion from primal times have always been somewhat allied. Myth and history correlate the two in many instances; so many in fact, one is led to believe the ancient priests included the study of curative methods in their training. Among the many angles which a study of this relationship produces is that of ancient child worship. Archeologic writings, ancient statuary and architecture, and many other small but definite proofs exist that show that reverence for motherhood and its attendant functions were but incidental to that of the offspring.

And while the Old World can, perhaps, thru Aryan and other civilizations boast of more definite evidence, signs that the same thing existed on the Western hemisphere are not lacking, as witness the Museum at Mexico City. There are gathered samples of writing and statuary from the Aztecs and other aboriginal tribes, which clearly show the effects of child worship. One of the most interesting of these is a Swastika. Popularly supposed to be a Greek Symbol, signifying good luck, the authorities there claim the example far antedates the Greek era, coming from an earlier Chinese dynasty. And, contrary to the accepted Grecian idea, this symbol is said to express the perfect coitus, complete love and the precursor of the "raison d'etre" of the doctrine. Whether this is correct or not is beside the question, but certain it is that this early influence permeated the entire civilization of the hemisphere and became inculcated in the varying creeds and doctrines.

It crept by word of mouth from lands far south to the aboriginal Indians on the shores of the North Pacific, and long ere the coming of adventurers, seeking lands for conquest or trade routes for commerce, this age old idea of child worship was practised.

Among others of its phases was the ritual of the pregnant woman and her husband. Customs and religion had decreed that each should bathe in flowing water just prior to the birth; the woman subsequently leaving for the shore, the man remaining until the wail of the newly born should reach his ears. This, it is said, was done to prevent the scent of humans being picked up by wild animals.

At the western end of Stanley Park, in Vancouver, there emerges from the sea a rocky plinth, known as Siwash Rock. It would, perhaps, be too much to say the rock is the result of the custom mentioned but it certainly is responsible for one of the quaintest legends that has been handed down from the lore of the aboriginals.

For many years the white man had known the rock by name, had seen its likeness to a human, but it remained for Pauline Johnson, Indian princess and poetess, to translate for general knowledge the story handed down by her people from time immemorial. She tells in her own inimitable manner of how a young Indian chief had married a maiden and how their hut was blessed with a child. According to custom they entered the water off Stanley Park. The wife left him after she had performed her ablutions, telling him to wait till sundown. And just when senescently the sun was draping the mountains in the distance with a golden nimbus, from around the rocky shore there appeared a large canoe with four giants therein. Emissaries they were of the great Sagalie Tyee, the god of the Coast Indians.

Siwash Rock

Seeing the young chief in the water, they commanded him to go ashore, for it was well known that if human hand touched their boat they would instantly become mortal. He told them the circumstances and refused to obey. They took counsel and decided that he must be turned into stone for, while he disobeyed them, they knew he was doing right. Suddenly the cry of a new born infant sounded across the water, the young chief started for the shore, but the decree had gone forth. Just as he reached the sloping ground he was turned into the rocky form that now stands. The legend says the gods spoke as follows: "You shall never die but shall stand thru all the thousands years to come where all eyes may see. You shall live an indestructable monument to Pure Manhood." And, to further prove the legend, there grows from the top of the rock a small fir tree, proving that there is life in the stone. Siwash Rock, under almost any conditions looks not unlike a man, but perhaps the illusion is almost perfect when the setting sun glints across the water and wraps the whole in cerise and gold.

HARBOR

Vancouver, Canada's Pacific gateway, is looming large in transportation circles these days, for with almost phenomenal progress has she created new records for freight figures. Perhaps as astonishing an example as is recorded in transportation annals are figures for grain shipments. In 1920 thru one government elevator less than one million bushels were exported. In 1923 twenty million went thru, while in the crop year ending next August shipments and charters show that over fifty millions will have moved thru the port. So rapid has been the increase that facilities cannot be rushed to completion fast enough to take care of the situation and, altho the capacity of the elevator was doubled in 1923, making it a 2,000,000 bushel house, already it is insufficient and two new plants are under construction.

A big English corporation is building a 2,000,000 bushel elevator, while the Harbor board has recently taken over an uncompleted structure which was started by the Woodward Grain Co., and thru difficulties other than financial left standing when half finished. It is now in use.

On Burrard Inlet, a part of Vancouver's harbor, there are thirty-eight miles of frontage, with warehouse and storage capacity of 132,000 tons. Twenty-two miles of spur track feed these warehouses, all of which are close to the berthing spaces. Of these there are 21,000 lineal feet available at the present time, with several new docks in course of construction. Ballantyne Pier, one of the largest and most modern structures of its kind in America, and conceded the largest on the Pacific Coast, was recently completed at the cost of $6,000,000. It is 1,200 feet in length and 350 feet in width, having a total freight area of 394,000 square feet, with cargo capacity of approximately forty thousand tons. The very latest cargo handling equipment has been installed, including escalators, jib type cranes and Colby straight line cranes. Beside it are being constructed grain-carrying jetties with conveyors, which will permit close berthing and handling 60,000 bushels per hour. In addition to this pier there is planned over a two year period a program approximating $12,000,000 in improvements, including coal bunkers, storage warehouses, lumber assembly wharf and booming ground as well as several other developments. This is all being done by the Harbor Commission, which is an official board under the Canadian Government, and no account has been taken of private enterprise, altho several firms such as the Canadian Pacific Railway are building docks. The new pier of the latter company will be 1,100 feet long and will cost $3,000,000, while a new 1,000 foot dry dock has been recently opened. Spanning Burrard Inlet is to be a traffic bridge which will handle trains or cars, and give access to the North Shore, where much development work is looked for within the next year or two.

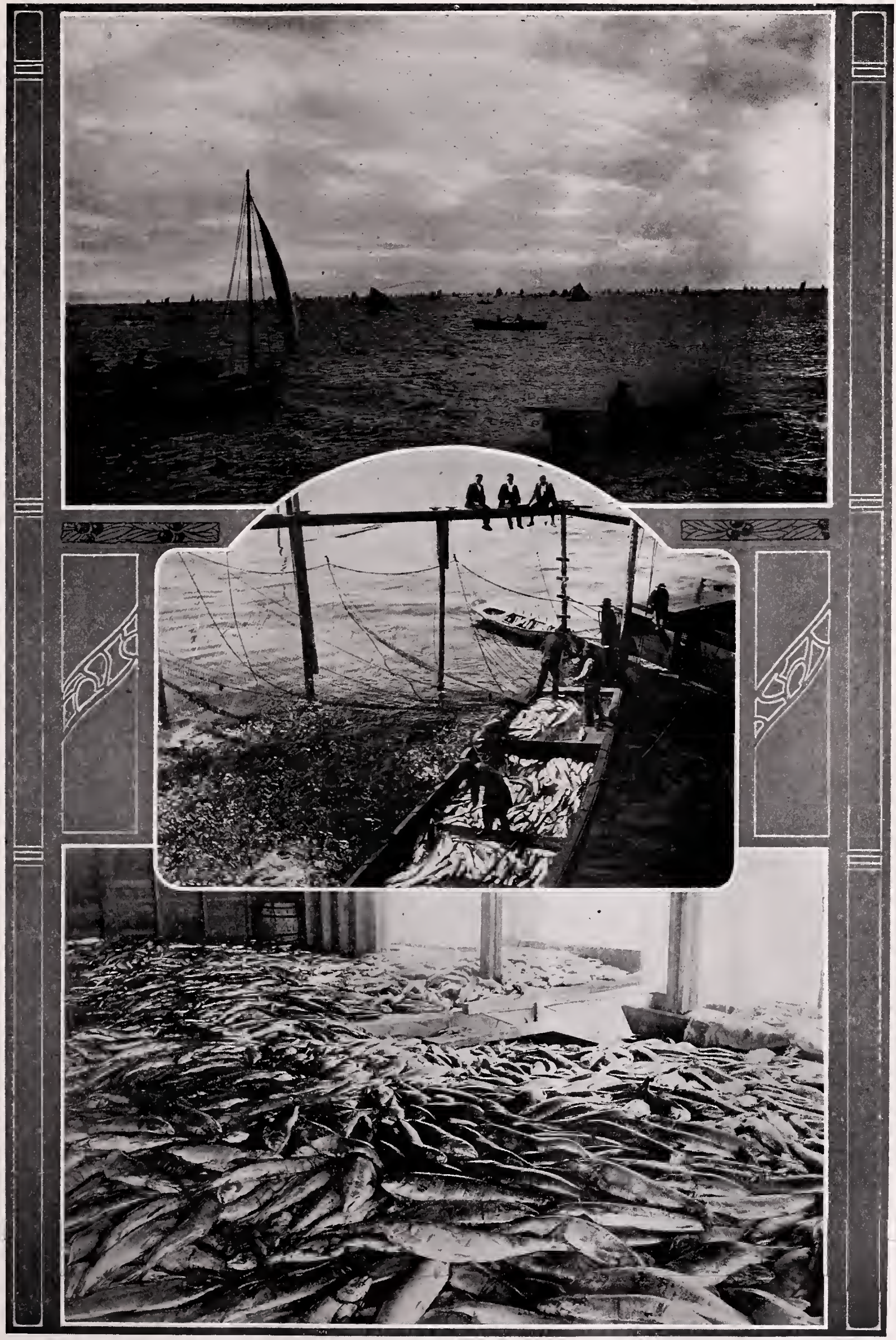
Part of Vancouver's Busy Harbor

Shipping statistics compiled from official sources give the following figures. Regularly plying to the port fifty-four lines of steamers, a gross tonnage of foreign deep sea vessels inward of 4,493,989, with a total tonnage including coastwise steamers of 13,436,989. Ocean going vessels to the number of 837 entered the port in 1923, a clear gain of 121 over the previous year, while 19,608 vessels of all kinds reported. Lumber to the amount of 290,767,000 board feet moved thru the port last year. The record for one day's register is 44 deep sea ships arriving in one day for grain during February of this year. The future of Vancouver's port can only be progressive. Predictions as to the future growth are, of course, problematical, but with development going on at the rate quoted above it requires no stretch of imagination to realize that as a transportation factor Vancouver is to assume an important place.

FISHING

Fishing as a business has been for many years one of the most lucrative of all industries carried on in British Columbia. The salmon, fresh from its migratory trip to the deep sea, for centuries chose the cool waters of the tidal streams in which to spawn. Urged by the age-old custom, these fish return every four years to the self-same stream and experts say the identical eddy where they were hatched out. Indented as is the coast line with a thousand rivers and fjords from Alaska to the American boundary, it was only natural that, following in the footsteps of the aborigines who lived principally upon this fish, either fresh or dried, the white man should turn to account the enormous runs of salmon when they came from the sea.

Canneries were started years ago in strategic spots along the shores, and modern devices installed for the quick handling of the fish. Canned salmon bearing the British Columbia labels has been exported to every country in the world. In 1923 over $16,000,000 worth of salmon was canned in the Province and the investment in equipment was in the neighborhood of $18,000,000. A department



Fishing Scenes in British Columbia

of the government supervises all fisheries and has under its control the issuance of licenses. From time to time steps have been taken to conserve the resources of the fisheries, and yearly under government control millions of eggs are placed in tidal waters from hatcheries.

Salmon are not the only kind of fish caught in British Columbia waters. Halibut from the extensive banks to the north form a certain portion of the trade. Many thousands of pounds are caught weekly, chilled on refrigerator boats, shipped to shore, there to be packed in iced cars and transported to all cities in the United States and Canada. Herring, cod and other species of fish are also caught in the waters and, while not so extensive, do by themselves create considerable work for many fishermen and cannery operatives.

Whaling is an interesting feature of the fishing grounds. Properly this class of industry should not be classed under fishing, but lacking a better classification it is included in the annual reports of the department. The sulphur bottomed whale is caught in the colder waters of the Pacific on the west coast of Vancouver Island. Stations are there established, and the bone, etc., taken from the head as well as the oil. These products find a ready market, and recently attempts have been made to use the bone for Mah Jongg pieces, following a slump in the bone market because of the decreased demand for "stays." The meat of the whale is cured, cooked and packed in tins. It resembles corned beef in appearance and color, with a slightly different taste, but finds a ready market in certain sections of the world, notably in South Africa where the natives are fond of it. The larger companies, which house and board a number of coolies there, are purchasers of the product as well as some firms in China.

To give some idea of the number of canneries in the Province, it may be stated that licenses were last year issued to 103, while boats used in the trade numbered 6631, and over 7000 separate fishing licenses were issued to fishermen in the same period.

MINING

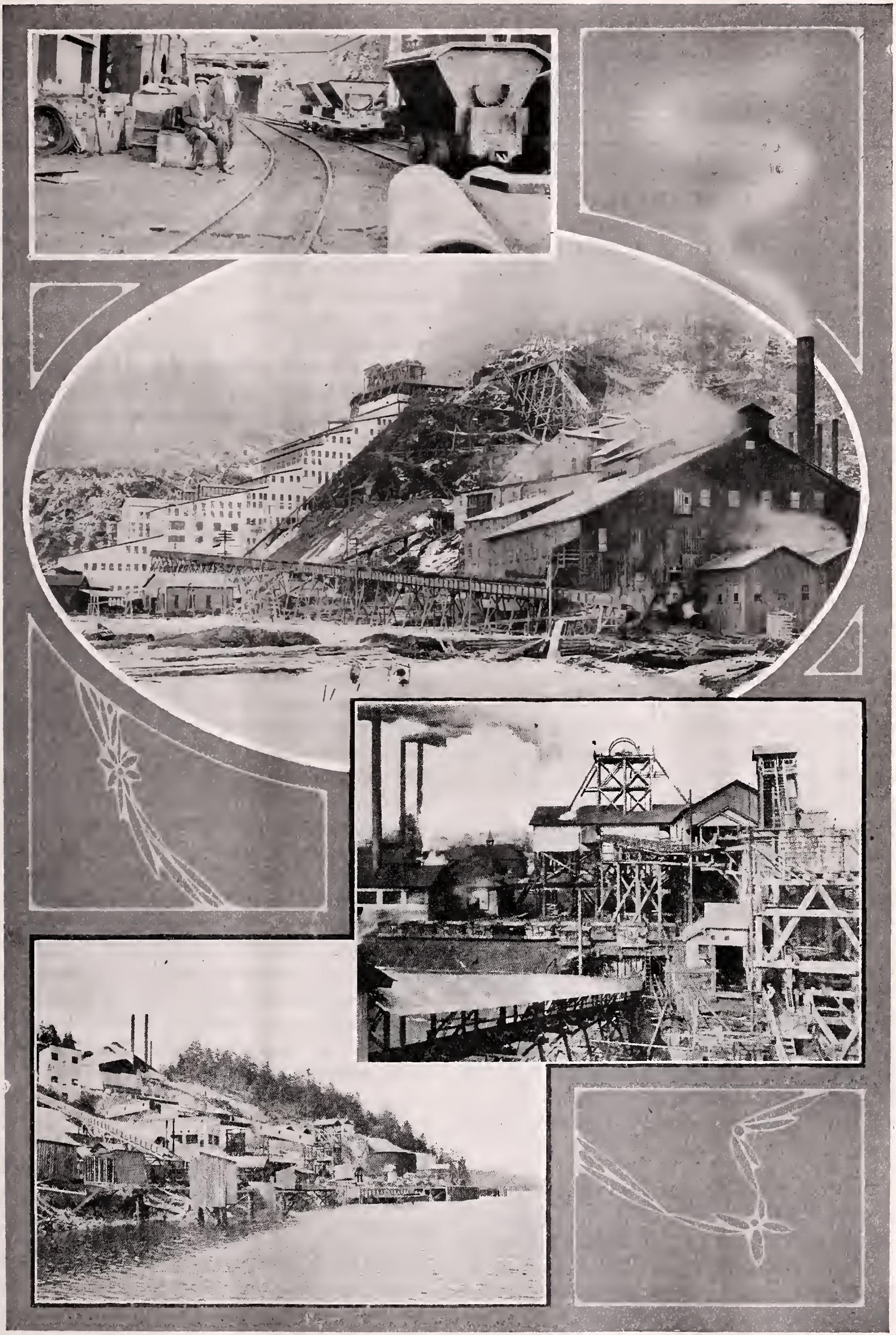
Reaching from the boundary line of the United States to the sixtieth parallel of latitude, British Columbia is seamed by two ranges of mountains, the mineral wealth of which has been as yet but slightly tapped. Minerals are one of the big assets of the Province and remain at the present time possibly the greatest potential resources. Countless acres of mountain country, filled with every form of metal from common iron ore to platinum, crop out from crags and plateaus in the 200,000 square miles of mountainous land. In area equal to twenty-five Switzerlands, and rivalling in powering grandeur the Alps or Himalayas, their sides contain mineral value that puts to shame the fabled Eldorado of myth. Gold, silver, copper, zinc, coal and almost every form of metalliferous product is mined within the boundaries.

Close to Vancouver, Britannia mine is stated to be the largest producing copper mine in the British Empire, while further north up the coast is Anyox, a thriving community which is supported by the industry of copper mining. Gold, too, supports a town, in fact a whole district, for close to the boundary of Alaska in the Portland Canal area is the Premier, a gold mine that has, does still and promises to produce the equal in quantity of any similar project in the world.

British Columbia's mining days date from the earliest records but the impetus was given to its great mineral wealth when in the seventies the great strike was made in the Cariboo district. From the gold fields of California with feverish haste the seekers after the precious metal came. Overland, by boat, any way, they flocked to the rich placer streams. That brought into prominence the wealth of rock and soil which ever since with varying degrees of success has been mined. The Kootenay country, near the international boundary line, was opened up. The Slocan country and others in nearby territory all were more or less spasmodic producers for many years, but when it became necessary to obtain capital to work the projects, the claims passed out from the hands of the early prospectors.

Most of the production now in the Province is handled by companies with machinery which permits reduction on a sound financial basis, altho nearly every year reports come in of strikes in new fields, while with improved methods many former claims are being worked over, and there is every likelihood of extensive development in several of the older areas, notably the southern sections close to the boundary line.

Coal has provided one of the most lucrative and best established forms of mining. There are vast deposits in various places in the Province, Vancouver Island being one of the largest areas on the continent and reputed to have 50 per cent of the entire coal deposits of Canada, of which the Province hos 65 per cent. In 1923 metalliferous products in the province amounted to $39,699,758, an increase in two years of 41 per cent.



Mining Scenes in British Columbia

NORTHWEST MEDICINE
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EDITORIAL

THE VANCOUVER NUMBER

The June meeting of the Pacific Northwest Medical Association, to be held in Vancouver, will be noteworthy by reason of the fact that this will be the first time a combined meeting of the whole medical profession of the Northwest states and British Columbia has been held on Canadian soil. Altho physicians of these states have attended medical conferences in Vancouver and Victoria at various times in past years, there has never before been an occasion for their assembling en masse, as is proposed for this meeting. There are doubtless many physicians in the states of the Northwest who are unfamiliar with Vancouver and its attractions. The object of this Vancouver issue is to present some facts regarding the city and its surroundings, which will make an appeal to the prospective visitors for this summer meeting.

One chief attraction of this assembly will be the opportunity for members of the medical profession on both sides of the line to get better acquainted with each other. Undoubtedly in the past there has been a degree of aloofness between the physicians of the two nations. There will be many advantages to ensue from this opportunity for closer contact. The same kind of men and women comprise the medical profession of each country. Their education has been the same, and if their ancestries are traced back far enough, they have all descended from the same progenitors. There is every reason for establishing closer acquaintance and more intimate relations among these fine groups of the best medical people in the world. It is anticipated that a record-breaking attendance will appear at this meeting, which will long be remembered as one of the best which has been held in the Pacific Northwest.

OREGON SEMICENTENNIAL

The fiftieth anniversary of any organization is a noteworthy event. This is particularly applicable to such a celebration of a medical society of the farwest. The annual meeting of the Oregon State Medical Society, at Portland, May 27-28, will celebrate the semicentennial of its existence. Dr. A. C. Kinney, of Astoria, the president-elect, has the unusual distinction of having been president during the first year of the society's existence. This meeting will be largely devoted to reminiscences and the recalling of incidents in the lives of men who have made medical history in the state of Oregon during the past fifty years. As is fitting for such an occasion, the speakers on the program with one or two exceptions will be members of the Oregon profession. The mornings and afternoons of the two days will be devoted to business meetings and scientific programs. There will be special entertainment for the visiting ladies, with a banquet and dance on the evening of the second day. On the 29th the society will be entertained by the Portland Electric Power Company on a visit by special train to the Oak Grove hydroelectric project, where luncheon will be served.

The program has not been entirely completed. The following speakers, however, will comprise a large part of it: Dr. A. C. Kinney, president-elect, will present reminiscences of special interest. Dr. W. Kuykendall, Eugene, will have the topic, "Surgery Forty-five Years Ago and Now." Dr. J. A. Fulton, Astoria, will speak on "Retrospection and Introspection After Forty Years." Dr. F. B. Stricker, secretary of the Oregon state board of health, will present a paper on "Botulism." Dr. W. T. Williamson, Portland, will speak on "The American Medical Association." Dr. C. J. Smith, Portland, will present a "Program of the Oregon State Board of Health." Dr. Anna Mumby will read a paper on "Goiter Work in the Public Schools of Portland." Dr. T. Homer Coffen will have a paper on "The Early Recognition of Heart Disorders." Dr. W. B. Holden, Portland, will discuss "Visible Peristalsis in Intestinal Obstruction and Technic of Operation for the Same." Dr. William Sharpe, New York, will present two papers, "Acute and Chronic Brain Injuries in Adults," and "Brain Injuries in Newborn Babies and Children."

The University of Oregon Medical Alumni Association will hold its annual meeting May 26-27. On the 26th an all-day clinic will be held at the Multnomah County Hospital, and papers will be presented in the evening. On the 27th clinics will be held at St. Vincents and Good Samaritan hospitals in the morning. In the evening there will be a banquet, with election of officers and other business.

IDAHO STATE MEETING

The annual meeting of Idaho State Medical Association will be held at the Commercial Club, Boise, June 20-21. The following preliminary program has been prepared. On the evening of the first day there will be a dinner dance at the Country Club.

PRELIMINARY PROGRAM

Serving the Veterans, Col. Maddox, C.O., U. S. V. H. No. 52.

Diabetic Diet, J. F. Schmershall, Jerome.

Diabetic Treatment, C. H. Sprague, Pocatello.

Common Sense in Infant Feeding, P. D. McCornack, Spokane, Wash.

The Role of Calcium in Health and Disease, W. A. Price, Cleveland, Ohio.

Public Health Films (Open Meeting), F. W. Almond, Boise.

Tissue Grafts in the Orbit with Presentation of a Case, C. D. Cowles, Boise.

Adolescent Goiter, H. C. Irwin, Pocatello.

The Industrial Accident Board, L. W. Worstell, Boise.

Maxillary Sinusitis, C. W. Pond, Pocatello.

Practical Application of Details for Diagnosis, Prognosis, and Treatment of Degenerative Diseases Related to Dental Focal Infections, W. A. Price, Cleveland, Ohio.

Election of Officers; closing business. etc.

UNIVERSITY EXTENSION MEDICAL LECTURES

The medical lectures of the University Extension Course, to be given July 14-19 inclusive, will afford an excellent opportunity to become conversant with insulin. Professor E. P. Joslin is the foremost authority in our country on the subject of diabetes, and this will form the basis of his lectures. He is not only able, but most willing to impart as much practical information on this subject in the time at his disposal. Not only will the didactic lectures contain the latest views of the subject of diabetes, but the course of practical demonstrations, to be given in Department of Home Economics at University of Washington, will be a close up of Professor Joslin's methods in his Boston Hospital. This laboratory course will be given with the able assistance of Miss Ratite in charge of the Home Economics Department, and her assistant Miss Martha Koehne. Many have had the opportunity of seeing some of the results of these two scientific workers, and can feel assured of the excellence of any course given in their department. For the physician in the small community, unfamiliar with the best methods of administering insulin, as well as some of the dangers attendant thereon, a real opportunity will be afforded this year to obtain first hand knowledge of the subject from a man of international reputation. Inasmuch as the course this year is limited to three hundred, it would be well to reserve a ticket at an early date.

COMBINED X-RAY MEETING

Thru the efforts of the local x-ray men, Seattle and Mt. Rainier have been chosen for the combined meeting of the Western Section of the A. R. R. A. and the Pacific Coast X-Ray Society, July 21-24. These two societies include the x-ray men from Colorado, New Mexico and all other states west and south.

For the benefit of the local physicians there will be an open scientific meeting in Seattle, Monday evening, July 21. The following day the x-ray societies will motor to Paradise Valley, Mt. Rainier, where the scientific sessions will continue each evening, the days being given over to the pleasures of a mountain resort.

This meeting is to be held the week following the University Extension Course and it is hoped that many men thruout the state will avail themselves of the opportunity of a vacation at the mountain, and at the same time take in the combined x-ray meeting. Anyone interested or expecting to attend should communicate with Drs. Thompson and Dawson, 118 Cobb Bldg., Seattle.

PERMANENT MEDICAL CORPS FOR THE VETERANS BUREAU

A bill is now before Congress seeking legislation that will rectify the existing inequalities in the medical personnel of the U. S. Veterans Bureau. Doctors belonging to this Bureau are now of three classes, those with civil service status, those holding commissions in the Public Health Service, and the special experts appointed by the Director. General Hines considers that medical attention and care for disabled soldiers will continue for a long time. It is his desire that a permanent high grade medical personnel be built up. The plan favored by Bureau officials is the creation of a reserve medical corps under Public Health Service, of which the medical personnel of the Veterans Bureau will be a part. This new legislation contemplates the provision of such pay and living incentives as will attract the highest grade of medical skill into the Bureau service.

Unless such provisions are made that assure permanence of service and suitable compensation, medical men of high class and desirable qualification cannot be expected to remain attached to the Veterans Bureau. This contemplated legislation is a hopeful outlook for this branch of public service.

A NEW MEDICAL JOURNAL

The last comer in the field of medical journalism is *The American Journal of Physical Therapy,* the first issue of which appeared in April. The editor calls attention to the era of surgery reaching its climax with the twentieth century, coincident with a relative decline in medical procedures. The present increase in therapeutic interest has resulted from the presentation of some effective resources in therapeutic measures, in connection with developments in the realm of physical forces. The increased knowledge regarding radioactive and electromagnetic appliances has amplified the field of therapeutic application. The therapeutic range of physics in relation to the human body has been greatly widened and become an added resource. Matters under these lines will be presented in this new journal, which will doubtless, make an appeal to those practitioners interested in this form of treatment. The journal is published in Chicago under the editorial direction of Dr. Charles R. Wiley.

ERRATUM

In the editorial, Pierre Curie, in our April issue. it was stated, "1909 was the year in which the existence and character of radium was definitely established." The year should have read 1902.

MEDICAL NOTES

Lane Medical Lectures. The Lane course of lectures will be given at Lane Hall, Stanford University, May 26-30. The lectures this year will be delivered by Ludwig Aschoff, professor of pathology, University of Freiburg, Germany. The topics will be: Place of origin of biliary pigment, atherosclerosis, ovulation and menstruation, the morphology and function of the adrenal cortex and fatty degeneration.

OREGON

New Societies Organized. March 22 Mid-Columbia Medical Society was organized at The Dalles. The membership includes doctors from Wasco, Hood River, Sherman and Gilliam Counties. On March 29, at Bend, the Central Oregon Medical Society was reorganized. This society had been inactive for several years past.

Doctor Wins Damage Suit. Dr. George Parrish, of Portland, last month won a verdict in a damage suit for $10,000, brought against him by the plaintiff who alleged this amount of damage resulting from personal altercation. The jury reached its decision in about a half hour.

Malpractice Suit Lost. Last month a former patient brought suit against Dr. F. J. Ziegler, of Portland, for $25,000. on the ground that during an abdominal operation he removed an organ without authority so to do. The jury decided against this claim of the plaintiff.

Physician Wins Suit. Last month a logger brought a $15,000 suit against Dr. Robert T. Boales, of Tillamook, on grounds of improper attention following an accident. The judge ordered a directed verdict for the defense.

Dr. Charles Hamilton, who has practiced for many years at The Dalles, last month established himself for practice at Hood River.

Dr. J. L. Garner, who formerly practiced in Monitor, has located for practice at Harrisburg.

Dr. H. K. Stockwell, formerly of Eugene, has located for practice at Salem.

WASHINGTON

International Golf Tournament. On April 25 an international golf tournament was held in Seattle, between the medical golfers of that city and representatives of this sport from the medical men of Vancouver and Victoria, B. C. The day was ideal and all participants enjoyed a memorable occasion. The Seattle hosts defeated their Victoria guests by a score of 19-17, similar treatment being administered to the Vancouver representatives with a score of 36 to 18. At the annual banquet the visitors promised to reverse the score on Canadian soil later in the summer.

New Hospital Opened. The community hospital at Newport was opened for public use on May 1. The Hospital Association purchased the hospital equipment which had been under private management for several years.

Patients at American Lake Hospital. It was reported early last month that the Veteran's Hospital, at American Lake, is caring for one hundred five patients, about one-third of the capacity of the institution. More recently three additional physicians and several nurses have been added to the staff and about sixty veterans have been received from the state hospital at Steilacoom.

Hospital Staff Reorganized. Dr. George N. McLoughlin, health commissioner of Seattle, has reorganized the staff of the City Hospital. He has appointed a chief of various divisions who will serve for one year with a staff of assistants who will rotate with periods of service of three months each.

Hospital to be Established. Work on a new hospital will begin in a short time at Longview. to cost about $100,000. It will be the most complete and best equipped hospital in that part of the state. A systematic campaign for funds is about to be established.

Appointed Pension Commissioner. Dr. Paul Lewis, of Yakima, was last month appointed a member of the pension examining board of that city. He succeeds Dr. A. J. Helton, recently resigned.

Verdict Against Doctor. A verdict for $5,000 damages was last month awarded against Dr. James Sutherland, of Spokane. The plaintiff alleged malpractice in treating a broken arm. This verdict was returned in spite of testimony on the part of expert physicians that as good results as possible were obtained in a case of a very badly crushed arm.

Appointed to Reserve Corps. Dr. A. N. Codd, of Spokane, has been appointed First Lieutenant in the medical reserve corps in the U. S. Army.

Dr. J. H. McCormack, recently of New York, has located for practice at Ellensburg.

Dr. J. A. Mahan, of Ellensburg, left last month for a trip around the world and a period of study in Europe.

Dr. R. D. Forbes, of Seattle, left last month for a period of study in England and on the Continent.

Medical Wedding. Dr. E. E. Langley, of Spokane, and Mrs. Pearl Grant Britton, of Harrington, were married at the latter city April 20.

IDAHO

Result of Sale of Red Cross Seals. The executive secretary of the Idaho Antituberculosis association announced last month at Boise the result of the 1923 Christmas seals sale. The total receipts were $16,011.73. This was an advance of over $3,000 over the previous year.

MONTANA

Officers of State Board of Health. The semiannual meeting of the state board of health was held at Helena, April 3. The following officers were elected: President, Dr. E. M. Porter, Great Falls; Vice-President, Dr. E. G. Balsam, Billings; Secretary. Dr. W. F. Cogswell, Helena.

Hospital Under Construction. The Deaconess Hospital is being erected at Billings. under the auspices of the Methodist Episcopal Church of Montana. The building is partly constructed and will be completed in a few months. It will be finished in granite. It will be one of the most modern hospitals in the state, Rev. Charles D. Crouch, formerly pastor of St. Paul's Methodist Church, of Helena, will be superintendent of the hospital.

Addition to Hospital. Sleeping porches for tuberculous patients are to be constructed at the Veterans Bureau hospital at Fort Harrison, at a cost of $50,000. They will be built according to modern principles, adapted for the cure and treatment of tuberculosis.

Inquiry Conducted. The state board of eugenics, composed of Drs. R. C. Monahan, W. C. Cogswell and Caroline MacGill, held a special meeting at Warm Springs, April 23, to investigate sterilization operations recently conducted at the state insane asylum. It was stated that the superintendent had performed twenty-one operations of this nature, the majority of them without the consent of the board of euegnics, as provided by law.

Spotted Fever Appears. Three cases of spotted fever, and one death, have thus far been reported this year in Montana. The cases were widely separated, appearing in Lewis and Clark, and Ravalli counties. In the past ten years cases have mostly appeared in the southern and southeastern parts of the state. The state authorities are centering their attacks on the gopher which plays a special role in the propagation of the ticks.

Funds for Crippled Children. Last month an intensive campaign was conducted at Butte, for the purpose of raising funds for the rehabilitation of crippled children at St. Vincent's Hospital, Billings. The sum of more than $5,000 was secured. this being the amount which was aimed at by this drive.

Fight on Vaccination. Last month the periodical antivaccination contest appeared at Anaconda. Certain children were refused admission to one of the public schools by reason of lack of protection by vaccination. A group of parents appeared demanding admission for their children, excluded during the twenty-day period of quarantine established by the county physician. The parents' request was granted temporarily until the case could ultimately be decided in the courts. In the meantime a number of cases of smallpox were reported in the city and the danger of an epidemic was possible.

Deer Lodge County Medical Society held a meeting at Anaconda, April 12. Dr. Gail R. Soper read a paper on "The Prevention of Goiter." It was discussed by several physicians in attendance.

OBITUARY

Dr. Nathaniel J. Redpath, of Olympia, Wash, died suddenly of disease of the heart, April 21. He was born at Kelso, Wash., in 1860. He started the study of medicine with his grandfather, Dr. N. Ostrander. He received his medical degree from Jefferson Medical College, Philadelphia, in 1887. He was appointed assistant superintendent to the Western State Hospital, at Steilacoom, which position he held for fourteen years. Subsequently he located for practice at Olympia, which he continued until his death. He possessed the qualities that attract many friends. He was one of the well known members of the medical profession of that part of the state.

Dr. Charles M. Martin, of Bellevue, Wash., died April 24. He was born at Portage, N. Y., in 1829. He practiced medicine for more than twenty-five years at Greenville, Mich. He located in Seattle in 1890, a few years later moving across Lake Washington to Bellevue. He retired from practice about twenty years ago. He was always interested and took an active part in religious matters and was active in public affairs. He cast his first vote for Abraham Lincoln. He served as mayor and president of the school board at Greenville.

Dr. Willis I. Cottell, of Portland, Ore., died of disease of the heart, April 7. He was seventy-three years of age. He had practiced in Portland for more than thirty years. During this time he was proprietor of a drug store. He served in the city council and at one time was a member of the state legislature.

Dr. Arthur F. Comings, of Seattle, Wash., died April 12. He was seventy-eight years of age. He practiced medicine in Rockford, Ill., before coming to Seattle fifteen years ago. He was a former secretary of the Seattle Yacht Club. He was Past Chancelor of the Knights of Pythias of Illinois.

Dr. Laura J. Dice died March 24, at Waitsburg, Wash. She was born in Pennsylvania in 1852. After graduating from Wilson College, Chambersburg, she received her medical degree from the University of Pennsylvania. She practiced for thirty years at York, Pa. About a year ago she moved to Waitsburg.

Dr. W. F. Foskett, of White Bird, Ida., was killed, April 15, by the overturning of his automobile. He was returning from a night call, driving on the highway, when he probably fell asleep from exhaustion, and his car plunged into the Salmon river. He was found in the river with his back broken. He had practiced in that part of the state for twenty-five years.

Dr. Thoralf Scholdagar, Great Falls, Mont., died April 23, after two weeks illness. He was born in Christiana, Norway, in 1888. He graduated from the Royal Medical School of that city in 1907. After a postgraduate course in Vienna he came to America in 1909. He began practice in North Dakota. A year later he located in Montana, practicing at Belt and Sand Coulee for several years. For the last two years he has practiced in Great Falls.

REPORTS OF SOCIETY MEETINGS

OREGON

CENTRAL OREGON MEDICAL SOCIETY

Pres., J. C. Vandervert; Secty., R. N. Hendershott.

The Central Oregon Medical Society was reorganized March 29, at Bend. The reorganization was assisted by the presence of Dr. F. B. Stricker, secretary of the state board of health, and Frank S. Ward, executive secretary of the public health league.

The following officers were elected for the ensuing year; President, Dr. J. C. Vandervert, Bend; First Vice-President, Dr. J. H. Rosenberg, Prineville; Second Vice-President, Dr. J. F. Hosch, Redmond; Secretary, Dr. R. N. Hendershott, Bend.

CENTRAL WILLAMETTE MEDICAL SOCIETY

Pres., E. W. Howard; Secty., W. T. Johnson

The regular meeting of Central Willamette Medical Society was held at Eugene, Ore., Thursday, Mar. 6, at 6 p. m., with a dinner at College Inn, after which the scientific and business meeting was held in the clinic room of Eugene Hospital.

After the minutes were read and other routine business was disposed of, the local doctors of the Eugene Hospital displayed some interesting cases.

Dr. C. J. McCusker, of Portland, read a paper, the subject being "Prenatal Care." This paper brought out interesting discussion, led by Dr. Charles E. Hunt, followed by Drs. Beardsley, Robnett, Bartle, Kent, Johnson, Field, Harvey and others.

Dr. B. E. Dedham, of Portland, read a paper on the subject "Still-born." The discussion was led by Dr. Beardsley, followed by several others.

About thirty-five were present. The deep interest displayed in the papers was evidence that they were of practical value.

COOS COUNTY MEDICAL SOCIETY

Pres., Everett Mingus; Secty., H. M. Peery.

The regular monthly meeting of Coos County Medical Society was held at Coquille, Ore., April 1. About fourteen physicians were in attendance. Papers were read and discussion followed.

The proposed establishment of a medical hospital at Marshfield was discussed and endorsed in the following resolution:

"Whereas, it is self evident that there is urgent need of largely increased hospital facilities in Coos County, we hereby go on record as unreservedly favoring a fireproof, standardized hospital in Marshfield, with the understanding that the service shall be impartially available to the citizens of Coos County, who shall need medical, surgical and obstetrical aid and care."

MID-COLUMBIA MEDICAL SOCIETY

Pres., W. N. Morse; Secty., V. L. Hamilton

The Mid-Columbia Medical Society was organized at The Dalles, March 22, composed of physicians from Wasco, Hood River, Sherman and Gilliam counties. About twenty-five physicians were in attendance. The organization was assisted by Dr. E. B. McDaniel, of Portland, president of the state medical association and Dr. C. L. Booth, secretary; Dr. Ralph Fenton, president, and Mr. F. S. Ward, executive secretary, of the public health league, and Dr. F. B. Stricker, president of the state board of health. Thru membership in this county society members are eligible to membership in the State Medical Society and the American Medical Association.

Dr. Otis B. Wright read a paper on "Radium." Dr. Ralph Fenton read a paper on "The Conservation of Public Health." Dr. F. B Stricker read a paper on "Preventive Medicine."

The following officers were elected for the ensuing year: President, Dr. W. N. Morse, Wasco; Vice-President, Dr. Fred Thompson; Secretary, Dr. V. L. Hamilton; Treasurer, Dr. W. J. Sifton, Hood River; Board of Censors, Doctors Fred Thompson, R. H. Hamilton and H. C. Tranhe; Delegate to the state medical association meeting, Dr. W. N. Morse. Meetings of the society will be held the second Wednesday of each month.

POLK-YAMHILL-MARION MEDICAL SOCIETY

Pres., J. C. Bellinger; Secty., R. D. Ross

The Polk-Yamhill-Marion Medical Society met at the Gray-Bell in Salem, Ore., April 15. Dinner was served at 7 p. m. The meeting was called to order by the President, Dr. G. C. Bellinger. Minutes of the last meeting were read and approved.

Members present as follows: G. C. Bellinger, O. D. Butler, W. H. Byrd, P. W. Byrd, C. E. Cashatt, L. O. Clement, H. J. Clements, J. C. Evans, E. E. Fisher, L. F. Griffith, R. E. Kleinsorge, G. C. Knott, P. A. Loar, J. O. Matthis, P. L. Newmyer, C. H. Robertson, D. R. Ross, Edward Schoor, H. W. Steelhammer, P. M. Thompson, R. Lee Wood, J. O. Van Winkle.

Visitors present: Drs. Harold Bean, T. Homer Coffen, Trenton Johnson of Portland; Dr. E. H. Hobson, Salem.

The names of O. K. Wolf of Woodburn and A. R. Sargeant of Sheridan were proposed for membership and referred to the Counsellors.

A paper entitled, "Experience in Office Practice with Insulin," was presented by Dr. Harold Bean of Portland, which was discussed by Drs. W. H. Byrd, Trenton Johnson, Knott and T. Homer Coffen.

A paper entitled, "The Symptoms and Signs of Early Heart Failure," by Dr. T. Homer Coffen of Portland was presented, which was discussed by Drs. Fisher, Kleinsorge, P. W. Byrd and Harold Bean.

The President called the attention of the society to the desirability of meeting in some of the neighboring towns. Dr. Butler invited the society to hold a meeting at Independence.

The committee which was appointed at the last meeting to draw up resolutions relative to the work in the profession of the late Dr. Fred G. Hewett, of Independence, submitted their report which was read.

PORTLAND CITY AND COUNTY MEDICAL SOCIETY

Pres., C. S. White; Secty., K. P. Moran

Portland City and County Medical Society held a meeting April 2, at Portland, Ore.

Dr. H. G. Irvine, Professor of Dermatology at the University of Minnesota, read a paper on "Infantile Eczema." A skin clinic was held in connection with the meeting.

The question of pasteurization of milk was discussed as a means of stamping out typhoid fever and other diseases of which raw milk is a carrier. A committee was appointed to assist in the movement to accomplish this end.

WASHINGTON

CLALLAM COUNTY MEDICAL SOCIETY

Pres., W. J. Taylor; Secty., W. H. Taylor

The annual meeting of Clallam County Medical Society was held on Tuesday, April 15, at the Goneis Cafe, Port Angeles, Wash. The following officers were elected for the ensuing year: Dr. P. D. Moore, Sequim, President; Dr. Donald Black, Port Angeles, Vice-President; Dr. Wm. H. Taylor, Port Angeles, Secretary-Treasurer; Dr. Seaton, Port Angeles, Delegate to the State Medical Association meeting.

Dr. C. C. Tiffin, of Seattle, gave an interesting paper on the diagnosis of toxic goiter. A free discussion followed which was participated in by all the members present.

In the afternoon, preceding the evening meeting, the society held a free goiter clinic at the Resthaven Hospital, at which forty-nine cases presented themselves for diagnosis and treatment.

KING COUNTY MEDICAL SOCIETY

Pres., F. T. Maxson; Secty., C. E. Watts

The surgical section of King County Medical Society held a meeting at Seattle, Wash., April 14, Dr. A. O. Loe presiding.

PROGRAM

Benign Bone Tumors. By Dr. Roger Anderson. No accurate diagnosis can be made without the aid of a complete history and pathologic studies in addition to x-ray plates, the latter not being confirmative of itself. He emphasized the necessity of considering all the above diagnostic points before a radical operation is done. Lantern slides were exhibited, in which the history, end-results, pathology and x-ray points were presented.

In discussion Dr. Dwyer emphasized the personal interpretation of plates. Metastasis to bone tissue enters thru the nutrient artery and starts in the medullary canal. Differentiation between Paget's disease and metastasis to bone from carcinoma of the prostate is very difficult.

Dr. Brugman emphasized the use of all methods for diagnosis. There is too much tendency to amputation without sufficient gross and microscopic studies. Dr. Lile stressed conservatism, stating that not one in a hundred is cured by amputation. Dr. Murray stated that the greatest change in classification has taken place within the last five years. He reported a case of osteomalacia.

Dr. O. J. West said, for accurate microscopic study, one practically has to resect. No small section can be taken and same said to be a definite tumor. Three-fifths of all periostal growths are benign. Osteal tumors will show their nature at any time and place of section. It is essential for every vestige of tumor growth to be removed.

Blood Transfusion. By Dr. Wm. Speidel. Indications for transfusion are (1) Primary anemias, as in pernicious, to stimulate patient for remission, which may last from six months to several years. Purpura hemorrhagica can be best treated by splenectomy plus transfusion. (2) Secondary anemias are those following hemorrhage, septic cases, shock, etc. Grouping is best done in the laboratory, but knowing the group type of a few individuals this can be readily tested within a few minutes. Methods of transfusion are (1) Direct. Objection is it is time consuming and one is unable to estimate the amount of blood which flows across. ((2) Syringe method requires teamwork and necessitates great caution in preventing clogging of syringe. (3) Citrate method may give hemolysis, hematuria, and hemolytic jaundice. The phagocytes and opsonians are reduced. (4) Kimpton-Brown tubes is the method of choice. Be sure and expose the vein, as this is quicker and more accurate.

In discussion Dr. C. W. Knudson stated that reactions of the citrate method are variable. It has been found that rubber tubing soaked in sodium hydroxide solution will avoid reactions.

The medical section of King County Medical Society held a meeting, April 21, Dr. W. S. Griswold presiding.

PROGRAM

Cardiovascular Syphilis, by Dr. H. B. Haskell. The initial lesion appears in a small area just beyond the aortic valves and extends upwards and downwards, the extension up being more rapid than down so that the valves are affected late. Average age of onset of symptoms is 47 years and the average time from the appearance of the primary sore is between 15-20 years. Symptoms were described. Prognosis is good if treatment is instituted before valves are involved. Every case of cardiovascular syphilis should be thoroly mercurialized and given K. I. before salvarsan is used.

In discussion Dr. K. Winslow said syphilitic myocarditis should be considered in all cases. A routine Wassermann and x-ray should be done on every case. Salvarsan in aortitis or aneurysm may cause rupture, due to one manifestation of the Herxheimer reaction.

Dr. L. J. Palmer presented a case of repeated gastric hemorrhage which continued to bleed even under accurate medical management and which was eventually operated on, excision being performed with cessation of symptoms. The specimen showed a large vessel protruding from the center of the ulcer which could probably not have been controlled by any other means than surgery. Three cases of congenital polycystic kidney were presented.

Dr. C. E. Watts discussed gastric hemorrhage and stated that the treatment of choice should be medical. Hemorrhage can be controlled in practically all cases by accurate management.

Dr. Alexander Peacock discussed polycystic kidney, calling attention to the fact that bilateral involvement in one of the cases was unusual.

PIERCE COUNTY MEDICAL SOCIETY

Pres., S. M. MacLean; Secty., W. B. Penney

The regular meeting of Pierce County Medical Society was held in its rooms, Tacoma, Wash, April 8, Dr. S. M. MacLean in the chair.

PROGRAM

Side Lights on Medical History. Dr. Nathan Smith Davis, by Dr. B. A. Brown. An excellent review of the life history and ambition of Dr. Davis.

Recent Developments in Rickets. Dr. D. M. Dayton. Etiology of the disease was given, bringing out its frequency and discussing at length the sunlight treatment in early life of an infant. Discussed by Drs. Hopkins, Griggs and Steagall.

Intestinal Obstruction. Dr. J. B. McNerthney. Early diagnosis was featured, drawing attention to the failure of the medical man following up his first "hunch" and common sense, and referring to early surgery. High mortality from delayed surgery, rough surgery and the use of morphine. Discussed by Drs. Hunter, Whitacre, Keller and Willard.

SPOKANE COUNTY MEDICAL SOCIETY

Pres., C. E. Butts; Secty., G. H. Anderson

The regular monthly clinical meeting of the Spokane County Medical Society was held Thursday, April 10, at the Sacred Heart Hospital, Spokane, Wash. The minutes of the previous meeting were read and approved.

Dr. G. H. Anderson showed a case of auricular paroxysmal tachycardia, following diphtheria.

Dr. T. Barnhart showed a case of splenomyelogenous leukemia and a case with general lymphatic enlargement, probably aleukematic leukemia. Discussed by Drs. Patton, Anderson and Marshall.

Dr. E. S. Jennings, speaking for the Pathological Club, donated a sum of money to the speaker's fund. A motion was made that this be accepted. Carried.

IDAHO

CANYON COUNTY MEDICAL SOCIETY

Pres., R. G. Young; Secty., H. P. Ross

Canyon County Medical Society held a regular meeting at Caldwell, Ida., April 9. About fifteen members were in attendance.

Dr. G. W. Montgomery, of Caldwell, read a paper on "Skin Disease," which was followed by general discussion.

Cases were reported by Dr. H. P. Belknap, of Nampa, and Dr. J. W. Gue, of Caldwell.

PUBLIC HEALTH LEAGUES

WASHINGTON

NUTRITION BUREAU TO BE FORMED

As part of its expansion program, the Public Health League is preparing to establish a Bureau of Nutrition, which will consist of five members. Miss Martha Koehne, assistant professor of home economics of the University of Washington, will be the chairman of this branch of League work. She will have as her assistants other important leaders in the nutrition field. Miss Koehne recently lectured to the King County Medical Society at a special meeting at the University. She stressed the importance of food on health and illustrated her talk with several groups of rats. She has expressed herself as being desirous of cooperating with the League in every manner and particularly to aid in giving information to the public relative to the many fake vitamine remedies now being exploited.

The creation of this organization gives the League contact with the Washington Association of Dietetians. Other bureaus established have produced understanding and cooperation with the dentists and the pharmacists. Bureaus under contemplation will reach the public health and private nurses' associations. When these are created the Public Health League of Washington will have effective contact with the leading health organizations of the state.

WALLA WALLA SOCIETY ENDORSES GOITER PREVENTION

At the regular meeting of the Walla Walla Medical Society, held April 10, a formal endorsement was given to the League plan to prevent goiter. A committee was appointed to make any necessary survey in the public schools and to appear before public meetings and public officials urging acceptance of this preventative effort. The committee appointed consists of Drs. E. L. Whitney, chairman, Elmer Hill and Oliver Nisbet.

The League plan has been endorsed by practically every medical society in the state. In a majority of the societies committees have been working to complete goiter surveys. Thirty cities and towns of Washington are now giving chocolate iodine tablets once a week to school children. Nearly five hundred thousand of these tablets have been sold in the last eight months. It is expected by League officials that this state-wide prophylaxis effort will be materially enlarged for 1924-25.

COMMUNITY LEADERSHIP AND HEALTH

The League has been reaching Washington public opinion in many ways. Thru newspaper articles on health and by the issuance of pamphlets and booklets on health topics it has been possible to touch every community in the state. The Washington Health Builder, with its twelve chapters of health, will ultimately reach fifty thousand homes. As another means of public contact on issues of health, Robert O. Jones, the Executive Secretary of the League, has been appearing before Rotary, Kiwanis, Lions and other such luncheon club organizations. On a recent tour he spoke before the Rotary club at Ellensburg, the Rotary club at Yakima and the Kiwanis club at Walla Walla. He participated in the child health program at Walla Walla April 23.

Mr. Jones' topic, "Economics and Health," involves a discussion of the part medical science has played in conserving human life, and is a plea for more individual and community thought in terms of health. He has attacked the position of the Washington Antivivisection Society, pointing out the many things which have been accomplished by scientific animal experimentation. Healing fakers and the cancer "cure" brigades have received due attention. He has asked for better health laws and the impartial enforcement of the same, and has urged that the advice and aid of the seven-year-trained medical man be more liberally sought, if the span of human life is to be appreciably extended. These talks have been well received over the state and have been worth while in that medical history and aims have been thereby carried directly to the leadership of scores of Washington towns and cities.

OREGON

PASTEURIZATION OF MILK

The Oregon Public Health League, thru its Chairman of the Executive Committee, Dr. E. A. Sommer, has started a movement in Portland for the general pasteurization of milk. The following resolution was presented to the City and County Medical Society at a meeting, Wednesday, April 2:

WHEREAS, epidemics of septic sore throat and typhoid fever have at various times been attributed to the use of unpasteurized milk, and

WHEREAS, the tubercle bacillus is found not infrequently in milk used for human food, and

WHEREAS, it is felt that it is the duty of the various medical societies of the state to render scientific opinion and service on this matter, and

WHEREAS, the State Board of Health, including the City Board of Health and the State Dairy and Food Commissioner, has valuable information on this subject and should be present at meetings where discussion of same is held, therefore be it

RESOLVED, that the Chairman of the Oregon Public Health League, the President of the Oregon State Medical Society, the President of the Portland City and County Medical Society and the Dean of the University of Oregon Medical School be requested to appoint committees of three to meet with the State Board of Health, jointly with the City Board of Health and the State Dairy and Food Commissioner, that a general investigation and discussion may take place and scientific knowledge be given the public by the medical profession of this state.

At the same time the resolution was adopted and committees appointed to meet with the Oregon State Board of Health for general discussion and plan of action toward the carrying out of Dr. Sommer's resolution.

One meeting has already been held by the Committees, at which time they were enlightened on pasteurization matters by Dr. H. A. Harding who brought out that the last two epidemics in Portland had been traced to unpasteurized milk. Evidently before this investigation is completed, the citizens of Portland will be protected thru the active duties of the medical society in having the city pass the necessary regulations requiring all milk to be pasteurized.

IDAHO

GOITER SURVEY

The Idaho Public Health League has just commenced an extensive survey of the goiter situation in Idaho. This preliminary work will be followed later by a campaign in the schools of the state. The incidence of goiter in the Northwest is well known. However, with the exact statistics and information gathered from every physician and surgeon in the state, it is felt that the campaign will be built upon a solid foundation. Self-addressed stamped questionnaire cards have been forwarded to all medical men in the state. The final details and particular kind of a campaign to be used will be worked out at the June meeting.

HOSPITAL STANDARDIZATION

Edited by HERBERT E. COE, M.D.

RENDER TO CESAR THE THINGS THAT ARE CESAR'S

The American College of Surgeons has promulgated and fostered hospital standardization. By so doing a splendid three-fold service has been rendered: first, to the public which purchases the service; second, to the hospital which sells the service; and, third, to physicians who work in the standardized hospital. Of the three directly profiting by this service, the patient receives the greatest benefit. This is quite as it should be, as his interest is of paramount importance, and it is only just that it should be safeguarded above all others. For a very modest increase in the price he pays the patient today is insured against many of the evils of prestandardization days. The mistakes in diagnosis are fewer, the nursing is more efficient, the necessary laboratory work more adequate, the medical and surgical work is reviewed with an increasingly critical eye. All honor, therefore, to the American College of Surgeons for initiating and perfecting such changes which have placed the healing art upon a higher plane.

In the last issue of this journal under the caption, "The Application of Standardization," the statement is made, "Since they (the attending men) alone have the right to say this man shall do surgery, and this man shall not be permitted to do surgery, there is a great moral responsibility which they must assume towards the public." Gradually the public is beginning to look upon the hospital as a bulwark of protection, and just so far as the hospital protects the patient in the matter of surgery, just so much higher will it stand in the eyes of the community." These statements are obviously true, but why limit them to surgery. It may not be amiss here to offer the suggestion that the attending men on the hospital staff might say this man may do surgery but not internal medicine. Particularly might this apply to members of the American College of Surgeons.

Without harmony it will be difficult to form a staff which will work for the best interests of patient, hospital and staff. If by harmony is meant that internists are tamely to submit to the dictation of the American College of Surgeons, we may have it just so long as there is no rebellion. Many members of the College of Surgeons conspicuously display their certificates of membership. This stands for superiority in surgery, and those entitled to it may justly feel proud of having been awarded it. It does not proclaim to the world, however, superiority in the treatment of pneumonia, of typhoid fever and of heart disease. It does not stamp the possessor as having special skill in pediatrics, dermatology and nervous diseases. While proclaiming to the world their superior skill in matters surgical, there are few members who confine their work to surgery. The majority are unchanged by membership in the College of Surgeons. They are the same old general practitioners, grabbing every patient they can, and accepting their dollars for treatment of everything from dandruff to ingrowing toenails.

As long as there existed no line of demarkation between the surgeon and the general practitioner, no criticism could be offered, but when the laurel wreath of excellence has been placed upon the surgical brow, it is time to inquire into the origin of the prerogative to dictate to the entire medical profession who shall do this, and who shall do that in standardized hospitals. If the American College of Surgeons is willing to accept credit for the splendid achievements in hospital standardization thus far accomplished, it should listen attentively to the expression of widespread dissatisfaction of some of the ways and means of attaining further achievements. If harmony is to be the keynote of success, it can be greatly furthered by "rendering to Cesar the things that are Cesar's" and to surgeons the things that are surgical.

The above article from the view point of the internist is most laudable and timely. Let us have more of them. These columns are open to candid opinions, frankly expressed, upon any phase of hospital standardization. The more free the discussion, the more clearly are the good points emphasized and the more quickly may irritating conditions be corrected.

The writer of the above article inquires why the protection which standardization affords the patient should be limited to surgery. The question is most pertinent wherever it is justified, and the answer is perfectly clear. It should **not** be so limited. Any standardization committee of a general hospital which neglects to review and analyze cases other than surgical is derelict in its duty. Any such committee which is so constituted that it has no member qualified to review cases other than surgical is incapable of performing its full functions and the defect should be brought to the attention of the governing body of that hospital.

Such a condition is surely not in accord with the ideals of the American College of Surgeons. In the frequently stated essentials of the "minimum standard" the College does not emphasize the surgical aspects at the expense of the medical. To quote, "(1) That physicians and surgeons . . . be organized . . . " "(2) That memberships . . . . be restricted to physicians and surgeons who . . . " "(3) That the staff . . . adopt rules . . . governing the professional work . . . " "(b) That the staff review. . . . the clinical experiences in the various departments . . . such as medicine, surgery and obstetrics;" "(4) That . . . case records be written for all patients . . . a complete case record . . . includes . . . the treatment, medical and surgical; the medical progress . . . " Surely the internist would not rebel at this "dictation."

The writer of the article is again eminently correct in stating that the possession of a certificate of fellowship in the American College of Surgeons does not indicate proficiency in treatment of nonsurgical conditions. If a member of the American College of Surgeons treats a medical, pediatric, skin or other nonsurgical case in a standardized hospital, his diagnosis, records, treatment, etc., should be subject to just as careful review as those of his surgical cases. As the writer suggests, it should be the duty of the standardization committee, if his work is not satisfactory, to recommend to the governing body of the hospital that he be not permitted to treat such cases in that institution.

The writer is apparently under the impression, however, that the American College of Surgeons is assuming the right to dictate the various activities within the individual hospitals, perhaps thru the medium of the standardization committees. Such an impression would not be correct. The college is concerned, in its standardization program, with the patient, not merely the surgical patient, and the essentials of the minimum standard have been made broad enough to cover all types of cases, leaving the application of these principles to those familiar with local conditions.

Membership on standardization committees is not restricted to fellows of the College, and the trustees of hospitals should bear this fact in mind when appointing such committees. In some cases this is done, as witness the fact within the personal knowledge of the editor that an internist is chairman of one standardization committee and that another includes a pediatrist and a neurologist. But in many cases it is not done, and the lack of any one on the committee properly qualified to review nonsurgical cases is a condition which will bring criticism upon the American College of Surgeons which should rightly be directed at the hospital trustees or at the standardization committee for the faulty local interpretation of the broad general principles formulated by the College. The writer has clearly set forth one defect in the working of standardization. Let us set to work to remedy it. Also let us have more of these thoughtful, critical articles.

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

The Circulatory Disturbances of the Extremities, including Gangrene, Vasomotor and Trophic Disorders by Leo Buerger, M.A., M.D., New York City. Octavo volume of 628 pages with 188 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $8.50 net.

In this book the author has endeavored to elucidate the maze of confusion in which literature abounds, concerning such diverse clinical entities as Raynaud's disease, thromboangiitis obliterans and erythromelalgia which have been described as of similar origin. To present the whole subject of circulatory disturbances of the extremities understandingly the writer has, therefore, devoted some twelve preliminary chapters to general physiologic and anatomic considerations. Then he treats of the causes and forces entering into thrombus formation in several chapters, continuing with several chapters on intermittent claudication and the various types of gangrene. Next is discussed in twenty-seven chapters thromboangiitis obliterans. Following this are many chapters on arteriosclerosis and a great variety of clinical entities depending on neurotrophic, vasomotor and trophic disturbances.

No work in English has presented in such elaborate and painstaking form the subject of circulatory disturbances of the extremities. It is a colossal undertaking and the minuteness of detail is worthy of the best German school of investigators. It is equally full in descriptions of pathology, clinical appearances, diagnosis and treatment and must remain a monument and classical treatise on this rather poorly understood, tho very important branch of medicine that is equally significant to the internist and surgeon.

WINSLOW.

Applied Pathology in Diseases of the Nose and Throat. By Joseph C. Beck, M.D., F.A.C.S. Associate Professor of Laryngology,-Rhinology and Otology, University of Illinois College of Medicine, etc. 268 Illustrations and 4 Color Plates. Cloth. 280 pp. $7.50. C. V. Mosby Co., St. Louis. 1924.

The author states that while there is no work in the English language devoted exclusively to the pathology of the ear, nose and throat, it is not his intention to supply that need with the present volume, but rather to give his own personal experience in the study of pathology as applied to the problems of diagnosis and treatment. The study of pathology is absolutely necessary to the physician who would diagnose and treat disease, but the teaching of this vital subject may be made interesting or otherwise, depending on the method and style of presentation. The author has made this volume interesting and even entertaining reading for the practitioner by his method of applying the pathologic teaching to the diagnosis and treatment in his usual positive and practical manner. There are no wasted words, very few "ifs," no theorizing, and on the whole one has the impression of listening to straightforward, positive statements by one who knows whereof he speaks. The volume makes a suitable companion to Loeb's "Operative Surgery of the Ear, Nose and Throat," to which work Dr. Beck contributed extensively, and which the present volume resembles in its excellent typographic art. There are many reproductions of gross and microscopic photographs, a few of which are credited to other authors but in the main, they are original. Assistance by collaborators and laboratory experts is also acknowledged.

BRUGMAN.

A Practical Text-Book of Infection, Immunity and Biologic Therapy with special reference to immunologic technic. By John A. Kolmer, M.D., Dr. P.H. Professor of Pathology and Bacteriology in the Graduate School of Medicine, University of Pennsylvania, with an introduction by Allen J. Smith, M.D., Professor of Pathology in the School of Medicine of the University of Pennsylvania. Third Edition, Thoroughly Revised and mostly Rewritten. Octavo of 1210 pages containing 202 original illustrations, 51 in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $12.00 net.

According to the author this book has a threefold purpose: (1) To give to practitioners and students of medicine a connected and concise account of our present knowledge regarding the manner in which the body may become infected, and the method, in turn, by which the organism serves to protect itself against infection, or strives to overcome the infection if it should occur, and also to present a practical application of this knowledge to the diagnosis, prevention and treatment of disease; (2) to give to physicians engaged in laboratory work and special workers in this field a book to serve as a guide to the various immunologic methods; (3) to outline a laboratory course in experimental infection and immunity for students of medicine and those especially interested in these branches. Altho all these purposes are admirably attained, one feels the practicality only of the latter two. There seems little that is new concerning infection or the means of combatting or preventing it. Those interested in the theories and known physical characteristics of opsonins, agglutinins, cytolysins and like bodies will here find a most thoro presentation of known facts.

The part devoted to clinical allergy and biologic therapy, however, is replete with facts of real and practical use to the busiest of practitioners. It covers all that is known of anaphylactic shock and serum sickness, its symptoms and prevention, food sensitivity, asthma and hay fever, Schick test, blood transfusions and in truth, all those conditions justly attributed to allergy. Those doing research work along the lines of immunization will find the book invaluable. So also will the serologic technician. One regrets to find errors of text or typist in the section devoted to the Wassermann test, and the entire arrangement of this subject bears evidence of haste or carelessness in preparation.

WEST.

Gynecology. By William P. Graves, M.D., Professor of Gynecology at Harvard Medical School. Third Edition, Thoroughly Revised. Octavo volume of 936 pages with 388 half-tone and pen engravings and 146 microscopic drawings, 103 of the illustrations in colors. Philadelphia and London: W. B. Saunders Company. 1923. Cloth, $9.00 net.

More than two hundred changes have been made in the text and illustrations of this edition in the way of additions, omissions and corrections. Of these changes the most extensive are in the subject of ovarian tumors, in the etiology and pathology of which much new knowledge has been acquired. The extreme importance of gynecologic pathology has been stressed by the numerous additions in the drawings of microscopic sections. The interesting work of Sampson on the perforating hemorrhagic cysts of the ovary has been included in this addition. Under operative gynecology he gives two short chapters on urologic and proctologic operations which are so closely related in the female pelvis. Taken as a whole this production stands out by itself for general completeness and clarity of text and should appeal to the student and gynecologist alike as a very valuable reference book.

CHAS. D. SHANNON.

Lectures on Endocrinology. By Walter Timme, M.D., Attending Neurologist, Neurologic Institute, New York, with Twenty-seven Illustrations; 123 pp. $1.50. Paul B. Hoeber, Inc., New York. 1924.

This little book presents an epitome of present information regarding the ductless glands. The author states it is the reproduction of an article on "Clinical Endocrinology," published in 1921, and developments since that time have not been added. There are chapters on the thymus, pineal, thyroid, suprarenal and pituitary glands and the gonads. Under each gland are presented experimental findings and features of subinvolution and precocious involution. The mutual relations of the glands are discussed. Much information is here presented in a few pages.

The Care of the Baby. A Manual for Mothers and Nurses, containing practical directions for the Management of Infancy and Childhood in Health and Disease. By J. P. Croser Griffith, M.D., Professor of Diseases of Children in the University of Pennsylvania. Seventh Edition Thoroughly Revised. 12mo of 478 pages with 104 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $2.50 net.

There must be a demand for a book that goes thru seven editions. This volume is one of the best for information relative to the care of the baby. Various facts of pregnancy are discussed which will appeal to any expectant mother. Many characteristics of the healthy baby are considered and much valuable information for its care is presented. Fifty pages are devoted to the sick baby, not for the purpose of outlining detailed treatment, but rather suggesting hints to the mother to enable her to distinguish between minor and major illnesses. Numerous illustrations amplify the text with many valuable hints. It is a volume which any physician can safely recommend to his patients.

Surgical Clinics of North American. (Issued serially, one every month.) Vol. IV, No. 1. (Philadelphia Number, February, 1924.) 302 pp. Per clinic year (Feb., 1924 to Dec., 1924,) paper, $12.00; cloth, $16.00 net. Philadelphia and London. W. B. Saunders Co.

The first half of this volume is devoted to clinical reports from Bronchoscopic Clinic of Jefferson Hos-

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pintal. There are fifteen reports, dealing with various phases of bronchoscopy and esophagoscopy. Chevalier Jackson discusses pyloroscopy, together with a chalk talk on gastrostomy. Tucker considers the technic of retrograde esophagoscopy, which also is mentioned by Jackson. The latter half of the volume contains reports on many surgical conditions. Deaver and Reimann present essentials of surgical diagnosis. There is a timely consideration of surgery in diabets by Muller. The volume contains much more of striking surgical interest.

Impotency, Sterility and Artificial Impregnation. By Frank P. Davis, Ph.B., M.D. Second Edition, Revised and Enlarged. 168 pp. $2.25. C. V. Mosby Company, St. Louis, 1923.

This volume discusses many aspects of sexual matters which are not contained in ordinary medical books. There are chapters on the sense of smell, effect of odors, the voice and sense of hearing and the sense of sight, relative to their effect upon the sexual desire. Impotency is considered and methods suggested for its relief. A somewhat unusual chapter is that upon artificial impregnation and means of its production in humans. One inclined to study various facts of the sexual nature will find interest in this book.

National Health Series. 16 mo, full flexible Fabrikoid Average number of words per volume, 18,000. Price per volume, 30 cents. Complete set of 20 volumes (ready about May 1, 1924,) $6.00. Funk & Wagnalls Co., New York, 1924.

This series of monographs on important health topics is issued by the National Health Council. The first group of five volumes is as follows:

Cancer: Nature, Diagnosis, and Cure. By Francis Carter Wood, M.D.; Director, Institute for Cancer Research, Columbia University.

Man and the Microbe: How Communicable Diseases are Controlled. By C.-E. A. Winslow, Dr. P.H.; Professor of Public Health, Yale School of Medicine.

Community Health: How to Obtain and Preserve It: By D. B. Armstrong, M.D.; Sc.D.; Executive Officer of the National Health Council.

The Baby's Health. By Richard A. Bolt, M.D., Gr. P.H.; Director, Medical Service, American Child Health Association.

Personal Hygiene: The Rules for Right Living. By Allan J. McLaughlin, M.D.; Surgeon United States Public Health Service.

Each little book covers a vital subject, written in non-technical language, easily comprehended by the layman. These volumes are unique, each presenting an unusual amount of authoritative information in small compass on the nature of diseases and their prevention.

TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Cod-liver oil. Squibb—It has a content of fat soluble vitamine-A which is more than one hundred times that of best quality butter. For a discussion of the actions and uses of cod liver oil, see Useful Drugs. The average dose is 15 Cc. E. R. Squibb and Sons, New York. (Journal A. M. A., April 5, 1924, p. 1123.)

Sagrotan. A liquid composed of chlorcresol 8 per cent, chlorxylenol 4 per cent, soap 22 per cent, alcohol 9 per cent and water 57 per cent. Sagrotan is an antiseptic and germicide. The germicidal efficiency of sagrotan is stated to be 2.5 times that of an equal quantity of phenol. While the germicidal efficiency of sagrotan is almost equal to that of compound solution of Cresol U. S. P., it has the advantage over this preparation in that it is almost odorless; also, it is claimed to be less toxic. Lehn and Fink, New York.

Procaine-Epinephrine Ampules, 1 Cc. Procaine-Abbott, 0.22 Gm., epinephrine 0.00004 Gm. in Ringer solution, 1 Cc. The Abbott Laboratories, Chicago. (Journal A. M. A., April 12, 1924, p. 1199.)

Deodorized Kerosene-Welty. Kerosene which has been treated so as to remove the odorous constituents of commercial kerosene. Because of its solvent action on fats, deodorized kerosene-Welty is proposed for use as a pediculocide and as a means of removing dandruff and the detritus of wounds. Welty Company, Chicago.

Anterior pituitary tablets-Armour, 2 grains. Each tablet contains desiccated pituitary substance (anterior lobe)—Armour (see New and Nonofficial Remedies, 1924, p. 226), 2 grains. Armour and Company, Chicago.

Pituitary tablets-Armour, 2 grains. Each tablet contains desiccated pituitary body-Armour (see New and Nonofficial Remedies, 1924, p. 226), 2 grains. Armour and Company, Chicago.

Parathyroid tablets-Armour, 1-10 grain. Each tablet contains desiccated parathyroid gland-Armour (see New and Nonofficial Remedies, 1924, p. 224), 1-10 grain. Armour and Company, Chicago.

Pituitrin "S" (surgical). A slightly acid aqueous extract of the posterior lobe of the pituitary body of cattle, approximately six times the strength of Solution of Hypophysis U. S. P., containing 0.5 per cent of chlorbutanol as preservative. For a discussion of the actions and uses of pituitary preparations, see Pituitary Gland. New and Nonofficial Remedies, 1924, p. 225. The preparation is supplied in the form of ampules pituitrin "S" (surgical), 1 Cc. Parke, Davis and Company, Detroit. (Journal A. M. A., April 19, 1924, p. 1265).

PROPAGANDA FOR REFORM

The Resistance of Malaria to Quinin. In 1917, reports began to appear that English soldiers in the tropics were being attacked by malaria that quinin would not cure. A report was published that quinin was ineffective in cases that were complicated by dysentery. An extensive study has demonstrated that quinin will cure malaria and that dysentery does not prevent the cure. In these cases the physician administered the quinin by mouth and made sure that it was swallowed. A study of the intramuscular injection of quinin demonstrated that necrosis of the muscle always occurred and that the absorption was less satisfactory than when the drug is given by mouth. It was shown that there was a profound fall in blood pressure when quinin is introduced intravenously, and one case of death and one case of serious sepsis are reported. It was also found that quinin is too irritating to be administered by rectum. (Journal A. M. A., April 5, 1924, p. 1125.)

Antipneumococci Serum Types I, II and II and Polyvalent. The new and Nonofficial Remedies' description of antipneumococcus serum stated that thus far only the Type 1 serum seemed to be on reasonably secure clinical ground. In consideration of favorable reports on the use of antipneumococci serum which, in addition to the Type 1 organism, also represented Types II and III and Group IV, the

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Council on Pharmacy and Chemistry accepted such "polyvalent" serums.

At its 1921 annual meeting, the Council considered the available evidence for the use of antipneumococcus serum. The conclusion was reached that there was a preponderence of evidence against the employment of a serum which represented organisms other than Type 1. Accordingly, the Council has omitted from New and Nonofficial Remedies all antipneumococcic serums which represented organisms other than Type 1. (Journal A. M. A., April 5, 1924, p. 1138.)

Matamel. The statement of composition of Matamel which appears in the advertising of the Newton Laboratories is practically the same as that claimed for Agmel at the time. While Agmel was said to be obtained from the sap of Agave americana, Matamel is stated to be derived from another species of Agave, namely, Agave atrovirens Karw. An analysis of Agmel made for the Council on Pharmacy and Chemistry in 1912 showed the preparation to be a kind of molasses containing a small quantity of formic acid. No alkaloids were found, nor more than a trace of protein matter. At that time the opinion was expressed that the therapeutic value of Agmel was probably nil. (Journal A. M. A., April 5, 1924, p. 1139.)

J. Bernard King's Radium Fraud. For some years one J. Bernard King has been defrauding the public by selling earth as a cure for all the ills of the flesh under the claim that it was a radium salt. A quietus has been put on King's scheme through the issuance of a fraud order debarring him from the use of the United States mails, not only under his own name, but under the name of the "International Radium Company" and Radium Products Company." King called his product "Ray-Cura" and claimed that it consisted of radium sulphate found "in the mountains of North America." Ray-Cura was marketed in cloth covered pads which were composed of little sacks of a light colored substance of the consistency of flour. The alleged curative power existed in what Mr. King called radium emanations from this substance. The government investigation brought out that the contents of a pad which sold for fifteen dollars, cost less than six cents. The product was found not even to be radioactive and gave forth no radium emanation. (Journal A. M. A., April 12, 1924, p. 1215.)

The Pharmacology of Carbon Tetrachlorid. The most recent claimant for recognition as a means of removing hookworms is carbon tetrachlorid. The moderate cost of this chemical has enhanced its popularity. As the product appears in commerce in a variety of forms for us for different purposes, the A. M. A. Chemical Laboratory studied the quality of the market supply and elaborated standards that might serve to identify products suitable for medicinal purposes. As a result of this study, the Council on Pharmacy and Chemistry adopted standards for carbon tetrachlorid medicinal and listed the brands that complied with these standards. The remedy is comparatively safe, though serious symptoms and even death have been reported from its use, especially in patients addicted to the use of alcohol. Pharmacologic investigation has shown that the substance is relatively nontoxic because it is not readily absorbed from the intestinal canal. Severe intoxication results if the drug is introduced into the tissues directly through the circulation, as by inhalation, or if its absorption is favored by the presence of fats or of alcohol in the stomach and intestines. Hence, alcohol and fats—even milk, perhaps—are to be avoided when carbon tetrachlorid is administered. (Journal A. M. A., April 19, 1924, p. 1268.)

Parathyroid Gland Therapy. The administration of parathyroid gland has been reported of value in the treatment of a number of cases of tetany following the operative removal, or the injury of the parathyroid gland. It has prevented the attacks of tetany and of infantile tetany and seemed at times to have prolonged life, or to have saved it, while the injured glands regained their functions. It has been stated to be of value in some cases of gastric tetany, although in other cases the results were negative. Parathyroid gland has been used by some one or another at some time (and claimed to be of value) for conditions such as varicose ulcers, gastric, duodenal and cervical ulcers, tuberculosis, sinus of the hip, paralysis agitans, eclampsia, etc., but that such disorders are regularly and favorably affected by parathyroid gland administration is a conclusion unsupported by controlled clinical evidence. (Journal A. M. A., April 19, 1924, p. 1286.)

Tolysin Omitted from N. N. R. Tolysin is the proprietary name under which the Calco Chemical Company markets its brand of neocinchophen. The Council on Pharmacy and Chemistry agreed to recognize this proprietary name, first, because the Calco Chemical Company promised to use novatophan (under which name the drug was introduced) or neocinchophen (the New and Nonofficial Remedies' name) as a synonym, thus avoiding, in a measure, confusion concerning the identity of the substance on the part of physicians, and second, because at that time, the firm was the only manufacturer of neocinchophen in the United States. Before Tolysin was accepted the Council required the discontinuance of the claim that the drug is free from cardiac depressant and renal-irritant action, except when limited amounts are used. Despite this requirement, advertising recently issued for Tolysin implies that it is free from toxicity. Further, the Calco Chemical Company determined to break its agreement to use neocinchophen or novatophan as a synonym. The Council has omitted Tolysin from New and Nonofficial Remedies because (1) it is marketed with unwarranted therapeutic claims, and (2) by the omission of the established synonym, neocinchophen (or novatophan), the physician is likely not to appreciate the character of the drug and its relation to cinchophen. (Journal A. M. A., April 26, 1924, p. 1381.)

A NEW ANTISEPTIC DRESSING

The chlorine compounds seem to have been superseded by a new synthetic chemical antiseptic, and one, it is claimed, which does not labor under any disadvantages with respect to the preparation of solutions. This new product contains no chlorine, but bromine instead. Chemically it is known as dibrom-malonyl-ureide; commercially as Dibromin. Dibromin is offered by Parke, Davis & Co., and, like other specialties of this house, is offered on the strength of both laboratory and clinical experiment.

We are told that it has been used in upwards of five thousand cases, such as cellulitis, abscess, carbuncle, infected burns, trophic ulcers, suppurating lymph glands, compound fractures, surgical infections, dermatitis venenata, etc., and with such success that it is now recommended in all sorts of accessible infectious processes—on the same principle as that which governs the application of the chlorine compounds. It has the unusually high phenol coefficient of 105.

The one outstanding difference, however, between this new antiseptic and older ones of the same class is the ease with which it can be made ready for use. Add the Dibromin to the water, and shake a little; that is all. Dibromin is soluble in water up to 4 per cent. It is put up in 6-grain capsules. One capsule to a gallon of water makes a 1:10,000 solution.

NORTHWEST MEDICINE

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ORIGINAL CONTRIBUTIONS

A SURGICAL USE FOR INSULIN

Ira B. Bartle, M.D.

NORTH BEND, ORE.

Keizer Brothers Clinic

Every practitioner, either general or surgical, is often times confronted by a number of patients having a condition of acute or chronic furunculosis of more or less severity. Very often these conditions are hard to suppress and even apparently thoro investigation of the case fails to reveal the true cause. We have been confronted with these problems year after year and have tried almost every known cure, including the manufacture and the administration of autogenous vaccine and of the stock vaccine which seem to fit the cases. However, our results were far from being satisfactory, often cases continuing for weeks and even months, increasing in severity to such an extent that the patient was incapacitated from labor.

After we had begun to make an intimate study of diabetes in relation to the administration of insulin and to make a thoro research in regard to blood sugar condition, the idea came to one of our group that possibly these cases of chronic furunculosis might be due to a continued high blood sugar which had not, however, reached the threshhold and appeared in the urine. In all of our patients, routine examination of the urine is made, of twenty-four hour specimens twice a week in all infective cases coming under our care. Acting on this idea, a routine blood examination was begun on all cases of low grade boils which appeared in our clinic, and to the present writing a collection of sixty-five cases have been made, in which all but seven showed an increase in blood sugar to an extent of from one hundred and thirty to as high as two hundred and twenty-five, and yet in none of these cases did sugar appear in the urine at any time. Neither were there any diabetic symptoms. Hence, we came to the conclusion that these patients were not in any way true diabetics but being heavy carbohydrate eaters carry an excess of blood sugar sufficient to lower the tissue resistance to a point where infection becomes easy. And the maintenance of that infection is practically certain until conditions have lowered the blood sugar to normal or nearly there.

We are perfectly aware that infection has a tendency to heighten the glucose constituents of the blood quite markedly. However, it is not our belief that in these cases the primary cause of the increased amount of blood sugar is from the infection, but rather the opposite, that the cause of the infection or the ability to receive the infection comes from a high glucose sugar presence in the system at the time of infection. The personal history of almost all of our cases is that of high carbohydrate eaters, and they have continually maintained a high carbohydrate diet. There is to our mind no reason why a continued unbalanced carbohydrate diet, maintained over a period of many months, should not cause a rise in blood sugar and to such an extent that there may be constitutional disturbances from the same. In other words, these people who have chronic furunculosis with a high blood sugar, even tho there is no sugar in the urine, are potential diabetics, for we have not found any line between those who were classed as true diabetics and have boils, and those who have boils without having passed the threshhold, where sugar is found in the urine.

We have conceived the idea of treating these classes of infection by a strict regulation of the diet and in many cases the administration of insulin in proper doses. This procedure in our practice has been universally successful and it is one of our routine practices in the surgery, where infective cases are not progressing as we think they should, to make the blood examination. In many of these cases we find an excess of blood sugar. When this is properly corrected, the patient begins to show improvement. Of course, all surgical attention is given to the patient the same as tho he were not receiving insulin, but whenever the blood sugar approaches nearly a normal level there is a marked improvement in his condition. The surgical conditions that we are referring to are not of the same class as mentioned by Fisher and Snell in their article in the *Journal of the American Medical Association,* March 1, 1924, but cases in which there was no acidosis present. The only abnormality found was an excess in blood sugar.

Our method of treatment of these cases of chronic furunculosis has been, first, to reduce the diet among our laboring classes to as near a two thousand calory diabetic diet as the circumstances will permit. For those who are not hard manual laborers and do not require so great an intake, the diet is cut to practically fifteen hundred calories. Second, the administration of insulin iletin U-20, one drop for every ten milligrams of blood sugar in excess of 90 milligrams, administered fifteen minutes before the noon day meal if possible. Perhaps this routine was established by us more to accommodate our own class of patients because we have a great many of the laboring class to deal with and it is impossible for them to appear for the insulin injections at other times. However, if we had these cases under our care and it was possible, we would reduce the diet still more and give the insulin in broken doses before the noon day and evening meal. However, with the technic as outlined, we have had almost universal success and believe that it is well worthy of mention because of the benefit that we have derived from its use.

You may ask why the standard formula of one minimum of insulin for every ten milligrams of excess blood sugar. This is, as we have found, sufficient to be administered in one dose, advising the patients to eat a heavy meal following the dose of insulin. In only two cases have we had any ill effects from this sized dose and we believe that it is about correct. The blood sugar should be taken at intervals of at least ten days fasting, as in many of our cases the boils have disappeared within that length of time and we have found practically a normal blood sugar condition attained.

Hence, the blood sugar must be watched rather closely, especially in the younger patients. In this class of patients it seems to be rather a transitory condition and probably dependent upon the great excess of carbohydrate intake in the way of candies, milkshakes and so forth.

The author has taken up this subject with some of the best authorities on diabetes in the United States and Canada and has found various conclusions. Dr. W. D. Sansum, of Santa Barbara, Calif., in the *American Review of Tuberculosis,* Aug. 6, 1923, states all forms of infection lower a diabetic patient's tolerance. However, in talking with him, he gave the opinion that possibly the blood sugar condition might exist prior to infection in the class of cases we are reporting. Drs. Lemmen and Giles, of New Orleans, are of the opinion that in the higher glucose conditions undoubtedly there must have been an excess of blood sugar prior to the mild infections, while some of the lower glucose conditions may have been caused by the infection itself. Dr. McCloud, of Toronto, is of the opinion that the blood sugar condition existed prior to the infection, as this class of infection is scarcely able to raise the blood sugar more than ten or twenty points.

We are convinced that there is a good field for more thoro research along these lines and that insulin will be found of much value in the treatment of certain classes of infections, as well as in the treatment of diabetes.

Case 1. Mr. G., age 42, weight 156, height 6 feet. Blood sugar 190. Urine negative. Boils for eight months. A great sugar eater, on eggs, potatoes, four teaspoonfuls in coffee, chocolate between meals. Given a fifteen hundred diabetic calory diet and ten drops of insulin before lunch. Patient appeared for treatment Aug. 4, 1923. Blood sugar Sept. 15, 90. Patient discharged cured.

Case 2. Mr. C., age 57, weight 162, height 5 feet 10 inches. Appeared for treatment Aug. 7, 1923.

Blood sugar 180. Boils on abdomen at the waistline of three months standing. Diet consisted of bread, apples, syrup and potatoes. Given about eighteen hundred calory diet and eight drops insulin before lunch. Oct. 10, blood sugar 100. Patient discharged cured.

With this patient the boils disappeared in nine days but the blood sugar existed at 130. January 19, 1924, blood sugar 110 and patient still well.

Case 3. Mrs. W., age 65, weight 156, height 5 feet 5 inches. First came to our attention for severe iritis of the left eye which condition cleared in about ten days on Aug. 7, 1923.

Ten days later she reappeared with a small, painful boil on the left shoulder. Blood sugar was found 270. Urine negative. One thousand calory diet ordered and twenty drops insulin given. However, within five days, or Sept. 7, a carbuncle appeared on the left side of the nape of the neck, and attained quite a degree of severity. The blood sugar on Sept. 10 was 290. Insulin increased to 30 minims. Sept. 17 the carbuncle was well under control and the blood sugar had dropped to 160. The patient was discharged Oct. 18. Blood sugar 110. No recurrence to date.

Case 4. Mr. M., age 33, height 5 feet 7½ inches, weight 164 pounds. Came in June 7, 1923. Had had successive crops of boils since Nov. 22, 1922, appearing on the nape of the neck, forearm and wrist. At times so severe as to be unable to work.

Blood sugar 170. Urine negative. High carbohydrate diet. Put on fifteen hundred calory diabetic diet and eight minims of U-20 insulin at noon. July 2 blood sugar was 130. Boils disappeared. Diet continued but insulin dropped. July 28 boils reappeared with greater severity and blood sugar found to be 150. Patient ceased to work and was given six minims insulin at noon, five at night. Aug. 18 the patient had a blood sugar of 80. No more boils. I have seen this patient often and there is no recurrence.

Case 5. Mrs. McA., age 19. Boils for three months or more. Heavy carbohydrate eater. Came to us May 28, 1923. Boils mostly appearing on left shoulder and arm.

We administered stock vaccine for two weeks with the result of an increase of the severity of the boils. June 12 blood sugar was taken and found to be 190. Urine negative. Diet regulated to fifteen hundred calories and blood taken on June 19. Blood sugar still 190. Insulin given ten minims before the noonday meal. June 27 blood sugar 140. Insulin continued until July 5, when blood sugar was 95. Treatment discontinued. There has been no recurrence. The patient is now pregnant, April 5, and shows a blood sugar of 111.

Case 6. Mr. G., age 19. June 17, 1923, had successive boils since February, a light eater, not in robust health. Height 5 feet, 9 inches, weight 124 pounds. Blood sugar 150. Diet not changed. Insulin 6 minims before lunch and none by the mouth. June 5 gained a few pounds, boils the same. July 2 blood sugar 165. Weight 129 pounds. Diet one thousand calories diabetic. Insulin eight minims. July 17 weight the same. Blood sugar 90. Boils had disappeared. One month later patient had no recurrence and weight 132 pounds.

Case 7. Gladys H., age 2½ years. Aug. 2, 1923. Continued boils on the buttocks and waist line. Urine clear. Blood sugar 175. Given a whole milk diet for one week. Blood sugar 170. Gave two minims insulin noon and night. Diet continued. Aug. 15 boils practically gone. Aug. 20 blood sugar 120. Insulin discontinued but diet regulated. Sept. 24, no recurrence. This child was delivered while the mother was in eclampsia.

The remainder of our cases are very similar to these reported.

CONCLUSIONS

1. The amount of blood sugar that can be carried in the individual before it is perceptible in the urine varies greatly.

2. Individuals on continued high glucose diet very probably carry a high blood sugar, hence their tissue resistance is lowered to a point where infection is very easy.

3. Those who have a chronic furunculosis with high blood sugar are potential diabetics.

4. Infection itself again raises the blood sugar, thus forming a vicious circle which must be relieved in some manner. This manner is either by diet or by diet plus insulin.

5. All infected wounds are more amenable to surgical treatment, where the blood sugar is maintained at a normal level, by either of the methods mentioned in 4.

INVERSE RELATION BETWEEN IODIN IN FOOD AND DRINK AND GOITER, SIMPLE AND EXOPHTHALMIC

J. P. McClendon and Joseph C. Hathaway, Minneapolis (Journal A. M. A., May 24, 1924), believe that they have proved statistically that both simple and exophthalmic goiter in the United States are caused by iodin starvation. In this paper, they present the results of their analyses of foods from goitrous (Minnesota and Oregon) and nongoitrous (New England and California) regions. In the nongoitrous regions, the idoin content of the food may be 100 per cent higher than that in the goitrous regions. Larger amounts of iodin were obtained from milk and animal products and leafy vegetables and fruits, than from wheat. It is significant to note that canned salmon (this is also true of some other sea fish) does not contain as much iodin per ton of dry weight as some leafy vegetables raised in goitrous regions. In fact, milk, the leafy vegetables and some fruits (loganberries) contain the highest amounts of iodin of any land products. If these vegetables are thoroughly macerated or ground in the preparation of the food. it is probable that the iodin can be extracted in the alimentary canal; but with some fruits most of the iodin is in the seeds and skins, and sometimes these are not eaten; when the seeds are swallowed whole, many of them will germinate after passing the alimentary canal, and therefore it may be assumed that they have not been extracted thoroughly in regard to any constituent. To demonstrate the iodin retained from a normal diet, one of the authors, who had lived all his life in a goitrous region but has always been free from goiter, was the subject of a three-day metabolic period. For a three-day period the iodin intake was 0.57 mg., and there was excreted 0.021 mg., showing a retention of 0.036 mg. in three days, or 0.012 mg. a day. At this rate, it would require about ten years to accumulate 40 mg. of iodin, the normal iodin content of the thyroid. The iodin content of drinking waters was also investigated. The iodin poor waters contained less than 23 parts per hundred billion, and practically all the iodin rich waters contained more than 23 parts per hundred billion.

X-RAY TREATMENT OF TONSILLAR AND ASSOCIATED LYMPHOID TISSUE*

C. A. Rutherford, M.D.

SEATTLE, WASH.

December 26, 1923, Mr. B., frail, anemic, throat filled with constantly inflamed tonsillar and other lymphoid tissue, came to me for treatment. At the same time Mr. H., a strapping fellow, living at the same address had a tonsillectomy performed. Mr. B. has lost no time, had no trouble with his throat since the first treatment, is feeling greatly improved in health, and is satisfied himself that his throat is practically clear of lymphoid tissue and infection. Mr. H. suffered much pain, was totaly disabled for two weeks, remained toxic with a painful throat and infected cervical glands until March 3, when he reported to me for relief. He is now steadily improving under treatment.

Master W., age 11, referred by Dr. C., with the hope that I might sterilize his throat. This boy had a complete tonsillectomy performed three years ago. Chorea had recently developed. The infratonsillar nodules, the lymphoid tissue behind the posterior pillars and many spots over the pharynx appeared angry. He presented a pitiable picture of St. Vitus dance, and he was using the latest steps. I had to tie him down and tie the protectors on. Owing to the difficuty of keeping him in position, I treated him weekly with short exposures. The day of his sixth treatment he sat quietly like any normal child in my reception room for two hours, looked fine, felt fine, and the previous week had gained four pounds.

Miss R. came directly from a sanatorium to me. She was highly nervous and depressed and said her doctors wanted to remove her thyroid gland. Thyroid enlarged, pulse 100. Gave a history of having had a tonsillectomy performed three years previously but on examination there was little evidence to substantiate that statement. She received four treatments. Marked improvement followed and, disregarding my advice, she is now with a famous theatrical company, doing regular work and feeling fine.

Dr. Chas. Mayo recently stated that three-fourths of the abdominal cases operated on at the Mayo Clinic were the results of primary infection in the throat and mouth. With this in mind the following case is of interest.

Mr. M., age 32, to my personal knowledge has had a throat filled with greatly hypertrophied tonsils and other lymphoid tissue for fifteen years. Indigestion for years, not relieved by an appendectomy five years ago. X-ray treatments began December 29, 1923. May 2 the tonsils had atrophied and had the appearance of tissue paper, covering a small area in the tonsil fossae—thin, pink, smooth and clean. He said to me, "Do you think these treatments could have helped my stomach? I have no indigestion and can eat anything."

Time forbids my telling you of many similar cases. Is all this a fake, is it simply a coincidence, or is there, as I hope to prove, a scientific basis for these results?

There is much being written today on x-ray therapy which is, to say the least, bewildering. Quite typical of this to me, and I will summarize for your consideration, is the chapter on radiation, appearing in that otherwise good book on tonsils by Barnes, of Harvard. Barnes does not commit himself to any theory or fact as to where lymphocytes of tonsils originate, altho Murphy and others have seen in the germinal centers of the tonsil follicle all stages of mitosis from the lymphoblasts to the formed lymphocytes. Taking Murphy, Heinicki and others as authority, he states definitely that x-ray destroys lymphocytes, and follows this with the statement that in his experiments on irradiation of tonsils the lymphocytes were not destroyed. Again he states, if lymphocytes of the tonsils are formed in the tonsils, "then undoubtedly a complete and lasting atrophy of the tonsils might result thru radiation." He recommends only the split capsule operation and concludes his book by saying, "radiation can be given with safety and no untoward results, and should be given a trial in some cases."

The Rockefeller Institute of Medical Research for the past ten years has given us the results of their experiments, which indicate that x-ray is of great value in treating throat pathology. These findings, coming from probably the most conservative, scientific and ethical institution of its kind in this country, have ridden out the usual storm of prejudiced criticism, deserve your respect and your careful consideration.

You are familiar with the factors which go to make for the pathologic tonsil, but you are not familiar with the majority of infected throats unless you apply those same factors to the lingual and pharyngeal tonsils, the infratonsillar nodules, the lymphoid tissue behind the posterior pillars, the lymphoid tissue in the fossae of Rosenmüller and that distributed more or less generally over the mucous membrane of the nose and throat. Altho a little away from the mark, your picture is not yet complete without an examination for infection of or about the teeth, infected cervical glands or a chronically infected sinus. To deal with this pathology successfully we must relieve obstruction, pressure symptoms, establish drainage, eliminate present and prevent future infection.

With the enlargement of the tonsils the crypts enlarge and become more convoluted. This results in their ability to lodge (and they do lodge) quantities of debris, food, bacteria and, of much significance, leucocytes, which, due to their great increase, have actually been prodded thru the crypt walls into the crypts, carrying the epithelial cell lining with them. By a biopsy this condition can be proven. An important factor that determines the ability of bacteria to gain a foothold in the system is for a sufficient quantity of bacteria to come directly in contact with a surface denuded of protective epithelium or where the epithelium has become so altered that it allows of easy penetration. Afferent lymphatics of the tonsils have not been satisfactorily demonstrated and I believe it is safe to state that all inflammatory conditions of the tonsils are due primarily to direct contact of pathogenic bacteria with its altered mucous membrane.

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* Read before King County Medical Society, Seattle, Wash., May 5, 1924.

In 1914 The Rockefeller Institute extended the original observations of Heinicki and established the fact that lymphoid tissue was much more highly susceptible to x-ray than any other structures of the body with the exception of sex glands, and that it is possible to remove almost all lymphoid tissue without inducing detectable changes in other organs. Reamer and Witherbee have given us practically an absolute x-ray dose, called the skin unit. The four factors that together make the dose are the size of the current, the force of the current (modern equipment allows us to keep these constant), the distance from the patient and the time of exposure. One skin unit is the combination of these factors that will remove hair from the body but all will return by the fourth month. An erythema dose is the amount that will cause a blush of the skin ten days to two weeks after exposure. The hair falls out and will not return. For example, take the skin unit as 100 per cent. We have the limit of tolerance for the ovary, spermatazoa and lymphocytes at about 30 per cent or less, and a muscle cell at 180 per cent.

Three years ago the Rockefeller Institute reported forty-six cases of tonsils rayed with one exposure (Witherbee's improved technic calls for eight exposures). In all but four cases the treatment was followed by market atrophy; crypts opened and drained and hemolytic bacteria disappeared from the tonsils usually within four weeks. When we know that hemolytic bacteria are found on the tonsils of the babe three months after birth, the presence of streptococci does not seem to me to be of such great importance, so long as the mucous membrane remains intact, the crypts open, and the debris has no chance to accumulate.

Hickey, of University of Michigan, and later Kahn, of Detroit, have cleared throats of diphtheria carriers in from two to four days after a fractional dose of x-ray. This was true in 80 per cent of their cases. Bowditch and Leonard, of Boston, report twenty-six cases of acute pertussis treated by the roentgen ray. They state definite improvement followed which could not be explained by mere accident.

In the *A. M. A. Journal,* of May 3, 1924, Bowditch further reports 300 cases of whooping cough treated in the same manner. This article is painfully conservative. No doubt with a little further work in perfecting his technic Bowditch's results will be close to 100 per cent, and another serious disease will have been conquered. Many cases of defective hearing benefited by irradiation have been reported. Following the shrinkage of the lymphoid tissue in the fossae of Rosenmüller, the patency of the eustachian tube should be restored. The direct curative effect of x-ray on tuberculous glands is well known, thousands of such cases having been successfully treated.

Van Ree, of Amsterdam, reports 470 cases of glandular lesions, malignant and benign, treated by x-ray. Improvement was noted in every instance and clinical cure in 85 per cent. If the tonsils are lymphoid glands, why are they immune to x-ray treatment?

McKee's reports, three years ago, on a thousand cases of acne treated at Vanderbilt Clinic by x-ray, and the work of Cushing and Reynolds, have proven the fallacy of giving any weight to the objection of theorists that radiation necessary in this work might affect the pituitary gland. There are no known contraindications to this form of treatment, and it in no way interferes with subsequent surgery.

Many observers believe there is a direct relationship between the chronically infected throat and many toxic goiters, and have actually reported many cases where goiter symptoms were relieved by radiation and the clearing up of throat pathology.

All credit is due Witherbee, who for six years was roentgenologist to the Rockefeller Institute, for his pioneer work in this field, and his report of over 700 cases of tonsils rayed, fortified by hundreds of cases reported by other reputable men, has proven beyond the shadow of a doubt that x-ray properly used will cause shrinkage, drainage, and atrophy of the tonsils and adjacent lymphoid tissue; and, what is of equal or even greater importance, will produce a local immunity which will protect one from the usual recurrent attacks of tonsillitis and pharyngitis.

Rosenau and Anderson state that autosensitization is possible, and Hill, Morton and Witherbee's experiments on mouse tumors, added to the actual results observed on patients treated, lead one to believe that some biochemic change is brought about by irradiation which causes the local tissue, the local serum, or both, to become, if not bactericidal, at least inhibitory to bacterial growth.

Irradiation is not surgery. The x-ray therapist with his expensive equipment cannot begin to compete with the surgeon, when it is simply a case of removing a tonsil and collecting a fee; but when it comes to removing throat infection, the pendulum swings far in favor of the expensive equipment. The local and systemic benefits to be derived from irradiation of the pathologic throat, from aiding the singer's voice to the relief of cardiac trouble, I will not discuss, neither will I go into detail to explain why a safe, simple and efficient method of handling throat infection by radiation is much to be preferred to an operation, where one must of necessity confine himself to a limited part of throat pathology, where one must cut or tear thru infected tissue, strictly against one of the cardinal principles of surgery, where one must remove part of the normal attachment and actually leave bare much of the superior constrictor muscle of the pharynx (it is only in the minds of those unfamiliar with the technic of tonsillectomy where the split capsule operation is possible), and where one comes face to face with potential danger, if not actual surgical calamity.

I observed Witherbee's work for over a year. For several months I had the pleasure of working with him in his office, and now, after treating more than one hundred cases in Seattle, I am thoroly convinced that science has advanced to the point where it is both possible and advisable to practically discard the surgical removal of tonsils. With modern equipment, measured dosage and in competent hands, x-ray is not only safe but efficient.

SUMMARY

1. The tonsils and adenoids are only a part of the diseased lymphoid tissue in the average infected throat.
2. Small repeated doses of x-ray, 1-20 to 1-5 of a skin unit given at two weeks intervals, will cause any degree of atrophy of lymphoid tissue without damaging other tissue.
3. A biochemic change takes place which inhibits bacterial growth.
4. X-ray will cause shrinkage, drainage, recovery of protective epithelium, and immunity.

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THE PRESENT STATUS OF ROENTGEN RAY THERAPY FOR DISEASED TONSILS

O. M. Rott, M.D.

SPOKANE, WASH.

Ever since the report of Murphy, Witherbee[1],[2],[3] and their associates on the effects of small doses of roentgen rays on hypertrophied tonsils and other lymphoid structures of the nasopharynx, there has been an active controversy between the roentgenologists on the one hand and the laryngologists on the other as to what influence the roentgen rays have in ridding the tonsils of the bacteria inhabiting their crypts.

Nuzum[4], who made a study of this question from the impartial attitude of a pathologist and bacteriologist, found that x-ray therapy was effective in reducing the size of tonsils in but 16 per cent of a series of 218 pairs of tonsils, and that hemolytic streptococci, the essential organism in chronically infected tonsils, were permanently removed in but 50 per cent of the 32 patients treated.

Lederer[5] made a study of the effect of the roentgen ray in tonsillar disease in the clinic of Joseph C. Beck and in no case were any marked changes observed, and only in children with the typical hypertrophied tonsils were they able by the very closest observation to note even a slight change in size. Patients with infected tonsils with the usual recurrent attacks of tonsillitis were seemingly benefitted for a period, only to have a recurrence of the attack. These cryptic tonsils, with the usual infectious material which they harbor, were controlled bacteriologically and found, as is well known, not to have been affected by the roentgen ray. The type of tonsil which has thru disease and age undergone a fibrosis is but little affected by this therapy.

The only encouraging results noted were not so much objectively as from the alleviation of subjective symptoms, in that type of child whose pharynx is filled with lymphoid hyperplasia.

Borden[6], with the cooperation of Dr. Paul F. Butler, the roentgenologist, made a study of the clinical and pathologic effects of the x-ray treatment of diseased tonsils. The technic of Witherbee was followed. Sixteen cases were radiated and from all but two of these Borden resected the tonsils and as a result of very careful study found only the following changes:

"During the time the radiations were being given many of the tonsils seemed to be smaller and more normal in appearance, but when subsequently removed by dissection, no real change in size appeared to have taken place.

"After radiation many of the tonsils appeared to be normal in size and color, but at the time of operation a number of them were found to be filled with pus or cheesy debris.

"In cases wherein diseased tonsils may be justly suspected of producing secondary infections of the joint, heart, kidney or other important organs, x-ray radiations are inadequate."

Along the same line, Babcock[7] reports his observations on the results of roentgen ray therapy in nine cases of chronic tonsillitis, showing the futility of depending upon this method in dealing with chronic, infected tonsils. From his observations he finds that roentgen therapy, as now advocated, may cause more or less diminution in the size of tonsils or other lymphoid tissue in the pharynx or nasopharynx, but the residue has been observed acutely inflamed and much increased in size while inflamed. It has been demonstrated that it is the small fibrous tonsil that is as likely to serve as a focus of infection with remote symptoms. The observations on tonsils excised indicate that they are not made free of pathogenic bacteria; that there is no evident increase in connective tissue, diminution of lymphoid tissue, lack of activity of the germinal centers or widening of the crypts. Neither the adenoids nor the hypertrophic lymph nodules on the posterior wall of the pharynx disappear; nor do they change in any appreciable way; and they are subject to occasional inflammations similar to those preceding roentgen therapy. General symptoms involving the heart and joints have not been relieved in these cases by roentgen therapy, and in some of the cases they have improved, following an operation sometimes after roentgen therapy.

In conclusion, he feels that, until it is more definitely shown that diseased tonsils and other lymphoid tissue in the pharynx and nasopharynx can be eradicated as efficiently by a less unpleasant process, reliance must be placed on surgery.

In the disucssion[8] which followed the reading of the paper, no one spoke of seeing good results following the radiation of infected tonsils.

Shurly[9] reported his results at the last meeting of the A.M.A. and, as was to be expected, it was not complimentary to the roentgen ray as an agency in removing tonsillar infection. He found that purulent and cheesy material could be expressed from the crypts after x-ray therapy. Many of his patients developed acute follicular tonsillitis directly after irridiation and some, weeks later. He concludes that it is absurd, unscientific, radical and unpardonable for any roentgen ray man to state that roentgen ray takes the place of tonsillectomy.

From the foregoing array of data it seems that we must be skeptical as to the value of roentgen rays in ridding the tonsil of pathogenic bacteria. We must not permit our enthusiasm for an apparently simple procedure to carry us away from the one really adequate measure of removing diseased tonsils. While there are some cases, in which delay of surgical intervention might be justified while roentgen therapy is being given a trial, yet there are certain cases of severe systemic disease, where delay might be disastrous. In these cases nothing short of immediate surgical removal should be considered.

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CONSERVATIVE PROSTATECTOMY

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The discouragement which tried the pioneers of prostatic surgery the most was a mortality rate inapposite to the degree of surgery necessary to the extirpation of an obstructing prostate gland. One cannot review the earlier history of prostatectomy without having this particular misfortune well impressed on his mind, and for a time it would seem that all hope for the success of the operation was yielding to despair.

But as one reads on, it becomes inspiring to note, that, when despair seemed inevitable, the dominant will and spirit of the workers would not down. Naturally, there were periods when the operation was in disrepute and scathing criticisms were hurled at those who held to the belief that time and study would bring the operation into realm of safe and legitimate surgery.

Unless one possesses a thoro knowledge of the present day surgery of the prostate, it will not be likely that he will enter into an adequate understanding of the successes and failures of those who blazed the first trail. Moreover, he will be unable to appreciate their detection of the cause of the disproportion between the surgery applied and the high death rate that followed.

Insomuch as the operation had only been attempted in the presence of quite, if not complete, bladder obstruction, and insomuch as the deaths resembled metabolic disaster more than surgical shock, the conclusion was reached, and confirmed by recalling where similar deaths had been associated with the results of emptying a prolonged distended bladder by sudden catheterization, that surgery was counterindicated until the plus pressure, under which the kidneys had been functioning, together with the compensatory thrust of the heart's beat had been entirely relieved by a slow but adequate drainage.

Such a drainage was then accomplished in one of two ways. Either a filiform bougie was passed thru the urethra into the bladder or a small trocar was made to enter it by suprapubic puncture. With the trocar well in the bladder the stilet was withdrawn and a correspondingly small rubber catheter was immediately inserted thru the cannula. When the catheter was well within the bladder, the cannula was slipped out and from around it. A stitch thru the skin held by a tie the catheter in place.

No surgeon of today need be reminded of the rapid restoration of health such a drainage insures, nor need he be reminded how it prepares the way for a safe enucleation of an obstructing prostate. But we must not hurry away from the pioneer days of this particular field of surgery, for it should be remembered that success did not follow immediately after preliminary drainage had done away with the disheartening mortality of the earlier endeavors.

Turning again to the earlier history of prostatectomy, we learn that the second discouragement with which the pioneers were confronted was a cystitis stubbornly unwilling to yield. Why was this? It was the belief that residual urine could not obtain, once the obstructing prostate had been removed, but when the persistent cystitis was attacked by bladder irrigation, and it was found that the bladder was still unable to completely empty itself, the cause was discovered to be in the fibrous degeneration that the bladder's musculature had undergone. It was then apparent that a prostatectomy to be successful must be performed before cirrhosis of the bladder wall impairs its elasticity. With the introduction of the cystoscope the prostatectomist was enabled to determine this, and prostatectomy received a place wherein the most brilliant results, insofar as saving the function of the bladder was concerned, was obtained.

While this in a very brief fashion brings us to the recent workers, those of today and those of the yesterday, and while much discussion relative to the propriety of the perineal or the suprapubic route has been indulged, it is a fact that neither of the respective advocates included conservation of the function of sex. With all of those vexing and distressing symptoms of the enlarged and obstructing prostate eliminated by timely and well directed surgery, with the control of bladder function restored, with the return of nights of restful slumber no longer to be hampered by frequent awakenings from painful desires to empty the bladder, with the renewed energy and refreshed vigor that became the inevitable sequel of it all, were we to again be discouraged because of the sexual inability complained of? Indeed, was it not reasonable to expect this from a man to whom perfect health had been restored?

This brings me to the question suggested by the title of this article, namely, what is conservative prostatectomy? It may be well answered by quoting the dictum of Prof. Miles F. Porter, when answering the question, "What is conservative surgery?" "Unless," says Porter, "life, comfort, function and appearance are conserved in the order given, the surgery applied, no matter what, is not conservative." Keeping in mind those lessons of the past that have enabled us to conserve the life, and restore the comfort and urinary function of one who suffers from an enlarged prostate, let us briefly review the more recent evolutions which have given us our present day technic.

While it is true that prostatectomies have been accomplished by the perineal route with every desired result, nevertheless I am fully in accord with Dr. A. E. Rockey, when he says, "The claim for a smaller mortality in perineal operations is a fallacy which has been repeated from one to the other until it is accepted as a truth. The claim for better conservation of the sexual function or urinary control has not been proved in practice. It is now very generally conceded that in these particulars also the suprapubic operations give better results." (*Surg., Gyn. and Obst.,* April, 1913, p. 424.)

Beginning with the cumbersome method of Alexander, wherein a sound is made to enter the internal urinary meatus thru a suprapubic stab wound, that pressure applied might facilitate delivery of the gland thru the perineal incision, and ending with those most ingenious opening and closing retractors which, when closed may be passed per urethra into the bladder, one needs but to recall the topography of the seminal cysts, together with that of the ejaculatory ducts, to realize how such procedures would be most likely to jeopardize the very structures on which depends the conservation of the function of sex. If, then, and as we now believe, the sexual habit was destroyed during prostatectomy because of an eagerness to conserve only the life and the urinary function, and because of that eagerness we were tricked into a ruthless destruction of the seminal vesicles and ejaculatory ducts, it must be immediately apparent that the function of sex is the last and crowning feature of what may, in all candor, answer the question, "what is conservative prostatectomy?"

Before entering into a description of the method of enucleating a prostate without injury to either the seminal vesicles or the ejaculatory ducts, I will first acknowledge my indebtedness to the splendid work of Dr. A. E. Rockey, for it was by my becoming familiar with his "Composite Method of Prostatectomy," that inclusion of the conservation of ducts and vesicles as a superimposed addition was suggested.

The steps of the Rockey procedure he himself sets forth as follows: "Suprapubic incision (Belfield, 1883; McGill, 1886), total enucleation by the index finger (Eugene Fuller, 1894), support of the prostate by fingers in the rectum (Guiteras, 1898), scoring the apex of the prostate with the finger nail to start enucleation (Freyer, 1900), and intraurethral puncture with the finger to better conserve the internal sphincter. To this I have added delivery of the large gland thru the small incision by traction with forceps, and finally, in completing the operation and conducting the after treatment, two features which, tho I have satisfactorily used for several years, are now in print for the first time. They are valvular suspension of the bladder by two sutures, and the total abandonment of irrigation either at the time of operation or during the after treatment." To the above we have added the conservation of the vesicles and ducts during the enucleation.

Indeed, we may look no further than those impotencies that result from gonorrheal stenosis of the ejaculatory ducts to be made to understand how the very same sequel would impend, when the same structures have been torn from their natural moorings and subsequently buried within a bed of scar tissue.

Those cases of bladder obstruction that are relieved by either the electrocautery or punch division of that portion of the prostate gland that lies between the ejaculatory ducts and the urethra, after enlargement of the gland as a whole has forced this portion to assume the role of a third lobe, the so-called "prostatic bar," will not be dwelt on here, further than to repeat that, while this means of relief does not threaten the vesicles or ducts, and that some able surgeons of the present time believe that this simple procedure is being neglected because of the spectacular attraction of the complete operation, it is but justice to our own experience, when it is said that the complete extirpation is more sure in the securing of more stable results.

Not till the lay of a hypertrophic prostate is well understood and a knowledge of the adjacent anatomy has been mastered, will one fully appreciate the dangers of any haphazard attempt into this complex field of surgery, and as the entire enucleation is effected by the index finger, inevitable muddling and undue traumatization should first be minimized by repeated tryouts on the cadaver with the bladder opened wide, that the enucleation be carried out under the guidance of the eye. There is another point that should be kept well in mind. It is the relation of the ampule or prostatic fossa and the location within it of the verumontanum to the inner margin of the internal sphincter ring. This in mind guides well the first step of the technic about to be described. With the exception of the method

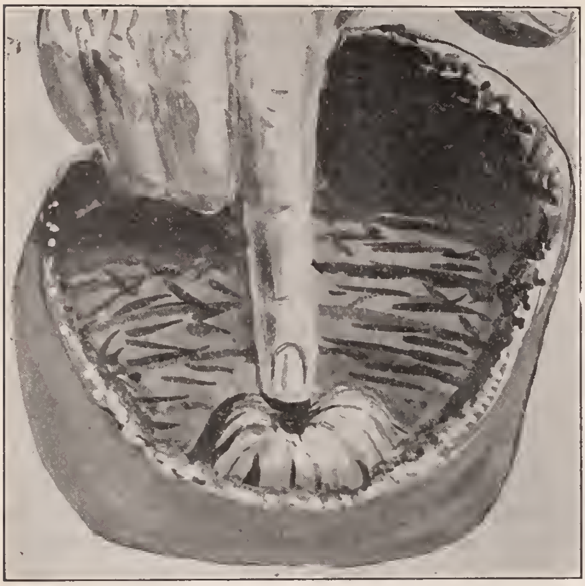

Fig. 1. The finger has found the urethral opening, the dilatation has been completed, the finger has just been withdrawn after having effected the circular and longitudinal scoring. All has been set for the enucleation.

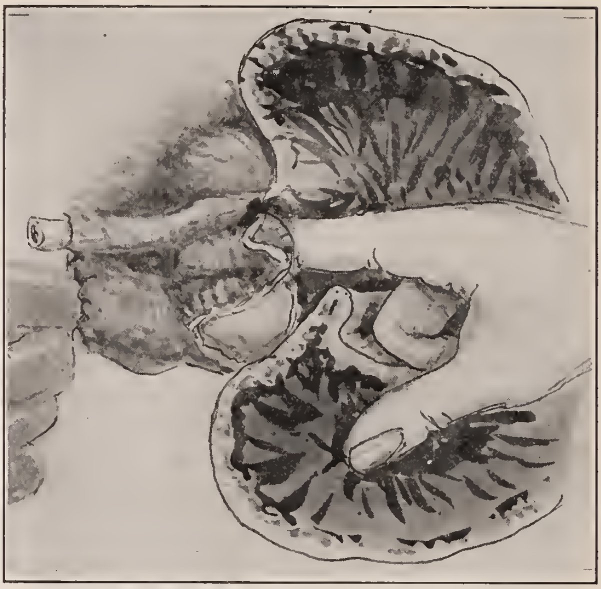

Fig. 2. The finger of right hand has been pushed into the urethra as far as the circular scoring. It has been made to leave the urethra thru the left side until distal urethra and left prostatic lobe are separated the finger's width. Here the line of cleavage is identified and the left lobe freed from all surrounding tissue except that which connects it to the urethra. In this position the lobe is enucleated from front to back until the split has been reached where an increase of downward pressure will complete it thru the "bar" portion of the lobes. This split will follow the reflected capsule of the ejaculatory ducts, leaving them intact as each half of the gland is delivered into the badder. Thus, by leaving the strip of tissue between gland and distal urethra for the last step of the enucleation, the finger readily comes into the longitudinal scoring line at a point meant to conserve the ducts when the splitting is begun.

of enucleation, the Rockey, "composite" technic is followed thruout every phase of the operation.

In brief it is as follows: Standing at the patient's left, the right hand bare, the left hand gloved, the index finger of the left hand determines at the median line the upper margin of the pubic bone. The incision is begun a finger's breadth above this margin and extended upward from one and a half to two inches. When the bladder, distended meantime with water, is seen to pout into the wound, the scalpel is so held that the back of its blade is made to draw the peritoneal fold above and out of harm's way, while the stab into the bladder is being made. When this precaution has been taken, the knife may be boldly plunged into the viscus, then withdrawn with an upper cut toward the pubic arch.

As the water gushes forth the index finger of the ungloved right hand is rapidly passed into the bladder, where it is to remain till the enucleation has been completed and the gland lies free upon the floor of the bladder. With the index finger of the ungloved right hand in the bladder, either one or two of the fingers of the gloved left hand are anointed with vaseline and passed into the rectum, where they are enabled to prevent the gland from sinking, while the enucleation is going on.

Identifying the opening of the urethra, the index finger is pushed into it till sufficient dilatation has been secured to reach the distal end of the prostatic fossa. The finger is then gently withdrawn and while so the ridge of the verumentanum and the approximate location of the sinus pocularis are made out.

Unless adequate dilatation be secured at the first thrust of the finger, the constriction of the circular muscles around the finger may so impair its tactile vision as to wipe away all guidance. To obviate this the dilatation may be effected by the second finger, thus saving the index finger's delicacy of touch for the mapping out and performance of the operation. With this dilatation complete, two things have been accomplished, namely, identification of the floor of the prostatic fossa and loosening the underlying ejaculatory ducts from the connective tissue with which they are surrounded.

With the index finger withdrawn to the distal margin of the constricting muscular ring, the tip of the finger sweeps around in line with the long axes of the fibres till it has effected a circular crack thru mucosa and all substructures to the true capsule of the gland. From this circular break, at a line with the middle of the floor of the prostatic fossa, the tip of the finger is made to divide the mucous membrane longitudinally to the bladder margin of the enlarged gland. When in this longitudinal division the finger tip has reached the true capsule of the

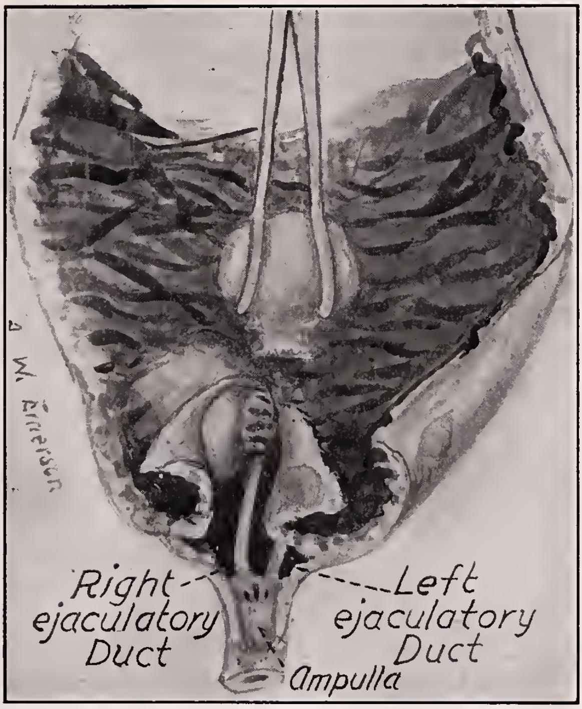

Fig. 3. Prostatic fossa or ampulla. Note circular and longitudinal break in their relation to verumontanum and the bladder. The left lobe has been grasped by sponge forceps after having been delivered from its bed. Note the broken bar portion and how it was lifted away from the ducts. Note how by elevating the right portion of the broken bar till it presents above the margin of the bladder wall the delivery may be completed without injury.

gland, a sliding pressure, keeping quite close to the bladder margin, will cause the gland to split downward and forward toward the initial circular division of the urethra.

At this point we may be reminded of the way the ejaculatory ducts enter the prostate. This is mentioned here because conservation of these structures greatly depends on it. At the base of the gland a distinct depression receives the ducts, together with a reflection of cellular tissue and a portion of the capsule. The ducts enter the gland so close, one to the other, that the reflected cellular tissue and capsular fascia envelop the two. From their point of entry they pass forward and upward, finally to emerge from the gland into the paraurethral tissue, from which they open into the floor of the urethra at either side of the sinus pocularis. With this in mind, it may be readily understood how the downward split of the gland will be deflected to either side of the envelop just referred to, as reflected cellular tissue and capsular fascia.

With the scoring thus completed the enucleation is begun by advancing the finger tip to the circular crack. Then finding the line of cleavage, the left lobe is attacked first. Beginning at its apex the finger sweeps to the patient's left, freeing the gland at every point except where it is adjacent to the paraurethral tissue. This cleaving is accomplished with the finger always in a tunnel. With the left lobe freed in all directions save that toward the urethra, the finger tip is again returned to the apex and begins the separation downward or backward, if you like, of the narrow strip along the line of the urinary canal. While the finger is effecting this, every vestige of tissue between the true capsule and the urethra must be kept pressed well toward the patient's right, for by so doing, and once the finger has passed the sinus pocularis, the safety of the ducts becomes immediately insured.

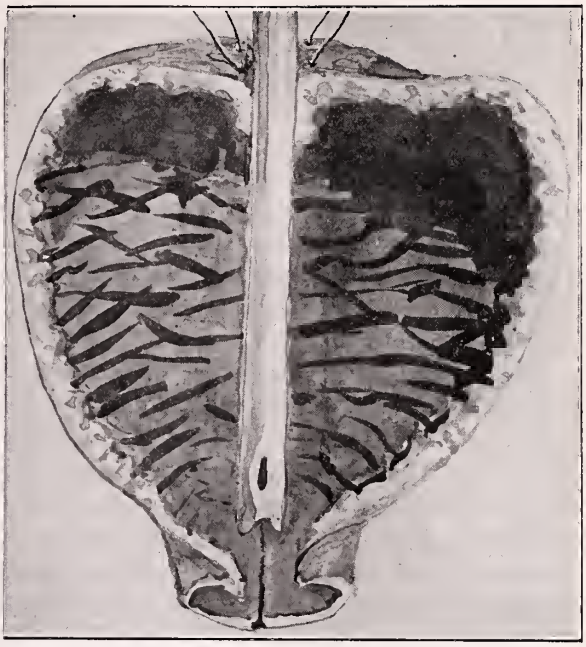

Fig. 4. The enucleation completed, the mucous membrane with all of its under attached tissues falls into place. Two sutures suspend the anterior portion of the bladder wall to the overlying fascia. A rubber drainage tube, notched and fenestrated, is pushed to the bottom. The portion of the bladder wall between the sutures and the free cut edge turn in like valves with the introduction of the tube. These valves facilitate closing when, at the end of ten days, the tube is withdrawn.

Soon will the finger tip begin to recognize the split in the gland and, when it does, it is but necessary to complete it to the bottom, when the left lateral half may be immediately delivered into the bladder. The right lobe, or rather the right lateral half, is removed in the same manner and when it, too, has been delivered into the bladder, the ejaculatory ducts within their connective tissue envelop are permitted to remain intact within their normal coverings. The deflected capsule and bladder wall readily settle into place, and once the healing of the parts has been completed, the ducts have in no way had their function impaired.

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POSTOPERATIVE INTESTINAL OBSTRUCTION

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"Intestinal obstruction is one of the most frequent of the serious complications which follow operations upon the abdominal organs. In by far the larger number of cases of obstruction following operation the condition is caused by intestinal adhesions" (Kelly and Noble[8]).

Postoperative adhesions may act in a variety of ways to cause obstruction. Perhaps the most frequent condition found is a matting together of several coils of intestine which may be adherent to each other and to the parietes or the pelvic viscera.

Deaver and Ross[3], in a series of 81 cases of obstruction caused by postoperative adhesions, found 51 followed operations for appendicitis and 44 of this series had had drainage at the original appendiceal operation. Fourteen followed operations upon the pelvic female organs. Sixteen were due to postinflammatory adhesions.

Paralysis of the intestines occasionally develops after operations, especially abdominal operations, tho there be no general peritonitis. Cannon and Murphy[1] have studied experimentally in the cat the various factors governing this type of intestinal paresis. They found that simple etherization was followed by a delayed passage of food from the stomach. Rough handling of the intestines at the time of the operation was followed by a very definite delay in the emptying of the stomach and by a slow passage of material thru the small intestines. Exposure or cooling of the intestines produced no further deleterious effect upon the intestinal activities.

Moynihan[12] states that there are two factors at work in determining the fatal issue in all cases of postoperative obstruction. Of these, the first and least important is the mechanical block in the bowel, the actual obstruction. The second, and by far the most serious, is the septic absorption from the distended, congested, and perhaps ulcerated bowel above the place of stoppage.

The toxic products which accumulate in the intestine above the obstruction are more virulent the higher up in the alimentary canal the obstruction occurs. In reviewing the extensive literature on this subject it is apparent that the nature of these toxins is still under discussion.

The research reported on by Ellis[5] on the cause of death in high intestinal obstruction, would tend to show that the toxin probably arises within the cells of the mucosa of the duodenum. It is inert in the cells in the normal organ, and when it is excreted into the lumen under normal conditions, is immediately combined with the content of the intestine and is innocuous. In obstruction the condition is changed, and instead of being thrown out into the lumen of the intestine, the major portion is forced into the lymph and thence into the general circulation. The portion thus excreted is intensely toxic, judging from the toxicity of the relatively small amount that is present in the content of the bowel.

Complete obstruction in the duodenum or upper portion of the jejunum has been studied experimentally in dogs by Draper, Hartwell, Whipple and their coworkers, and it has been shown that in these cases systemic infection can be excluded as a cause of the early death. Whipple[16] produced a closed loop in the duodenum of a dog just below the ampulla of Vater and then established an anastomosis between the stomach and the remaining intestines which permitted food, as well as bile, pancreatic juice and gastric secretion to pass freely into the lower intestines. Dogs so treated died in from thirty-six to seventy-two hours, evidently because toxic material was absorbed from the closed loop. Whipple concludes that this toxic material is derived from the intestinal mucosa itself and belongs to the class of proteoses, and states that the evidence is overwhelming that an active poison is concerned in the production of the clinical picture of intestinal obstruction and of the closed intestinal loops.

According to Dragstedt[4] and his coworkers, the intoxication is due to an absorption of toxic substances that are produced within the loop of bowel by the action of bacteria on proteins or their split products. When the loop was washed with water and ether many animals survived, apparently because the absorption of toxic substances was prevented. They found that anything that interfered with the local circulation, such as strangulation, increases the production and absorption of toxic substances.

From these studies we may conclude that the intoxication of high intestinal obstruction is often independent of systemic bacterial infection and depends in part on water losses and in part on the absorption of toxic substances derived either from the damaged mucous membrane of the intestine or from the bacterial decomposition of protein material.

Obstruction at lower levels of the intestines is less rapidly fatal than that in or near the duodenum. This is partly due to the fact that the vomiting of liquid is less profuse in such cases. Furthermore, the lower intestines do not give rise to such virulent toxic material as do the duodenum and adjacent jejunum. Closed loops of the large intestine produce such slight toxic effects that dogs with such loops may remain alive for months (Hewlett[7]). Hence we may conclude that in lower intestinal obstruction, circulatory changes in the intestinal walls and general or localized invasions of bacteria play a relatively important role in producing the symptoms of obstruction.

DIAGNOSIS

The early diagnosis of postoperative intestinal obstruction is very essential, as the mortality increases directly as the delay is increased. The most frequent form seen after operation presents symptoms which differ considerably from those seen in acute obstruction. The picture is usually as follows: After a laparotomy it is impossible to get the patient's bowels to move properly. There are not the free liquid movements and expulsion of flatus which usually follow the customary enemata. Finally complete constipation occurs. The abdomen becomes gradually distended and nausea, vomiting and the regurgitation of gas, which are usually noticeable from the beginning, increase in persistency and intensity. Visible peristalsis is usually apparent. On auscultation there is gurgling over the point of obstruction when there is partial occlusion. Pain becomes more severe with increased peristalsis. The pulse gets gradually weaker and more rapid. The patient is restless, suffers from thirst, and soon becomes weak. There is no temperature elevation as a rule but there may be a slight elevation as is usual following a laparotomy. The urine is diminished. The tongue is furred and the breath is foul. In many cases the symptoms of obstruction are not at all marked immediately after operation. The symptoms may be limited to constipation, slightly more pain and some distension. But as the adhesions become more dense and contract, the symptoms become more marked, and finally all the symptoms of obstruction are present.

Coffee[2] states, "If in a pelvic operation and particularly a myomectomy, the patient has done fairly well for the first twenty-four hours, becomes more uncomfortable at the end of thirty-six hours; the pulse rate gradually begins to rise, the patient assumes an uncomfortable, restless attitude, anxious expression of the face; gradually develops nausea and vomiting, first the contents of the stomach, then bile and finally intestinal contents, an enema brings little or no results, gradually gas distension increases, it is well to consider seriously the question of postoperative ileus. In fact, in the majority of such cases such symptoms as I have related mean postoperative ileus."

Laboratory findings do not play an important part in the diagnosis of postoperative intestinal obstruction. Leucocytosis may or may not be present. So many conditions may arise after a laparotomy which will cause an increase in the number of leucocytes that the sign is of value only when found in conjunction with the other symptoms of obstruction. In discussing mechanical ileus, Murphy[13] states, "The clinical story makes up four-fifths of the information; the physical findings, laboratory information, etc., make up the remaining fifth."

In making a differential diagnosis practically the only condition which is apt to be confounded with postoperative obstruction is acute peritonitis. Embolism of the mesenteric artery and thrombosis of the portal vein give a train of symptoms so closely resembling those of acute mechanical obstruction that preoperative differential diagnosis is rarely made. These conditions mentioned are all surgical lesions and demand immediate surgical treatment. Hence the importance of differentiation is not so great as far as the life of the patient is concerned.

Morphine should not be given in postoperative obstruction until the diagnosis has been made, as it tends to mask the symptoms. Murphy[14] states, "Never give morphine to deaden pain in the presence of a suspected mechanical obstruction of the bowel. Morphine fogs the danger signal of obstruction. A morphinized patient may continue with his ileus, apparently in a comfortable condition, until death is upon him."

PROGNOSIS

The prognosis in any case of postoperative intestinal obstruction is grave and depends largely upon the time when operative interference takes place (Kelly and Noble[8]). The time elapsing between the onset of the obstruction and the operation is the vital factor.

Murphy[14] wrote as follows concerning the prognosis in ileus: "The results in this field of abdominal surgery have not materially improved in thirty years, even with all the great recent increases in our knowledge of the pathogenesis and symptomatology of disease, and with all the modern improvements in surgical technic. The mortality, too, in mechanical strangulation of the bowel has not materially changed during these thirty years."

Deaver and Ross[3] have made a study of the mortality statistics of two hundred and seventy-six consecutive cases of acute intestinal obstruction. Of the 276 cases, 158 recovered and 118 died, a mortality of 42 per cent. In this series 81 cases, or 29 per cent of the total number, were due to postoperative adhesions. Of the 81 cases, 41 recovered and 40 died, a mortality of 49.3 per cent. In a small percentage of cases the obstruction occurred during the hospital convalescence, when the diagnosis could be made early and treatment promptly instituted. The average time from the first operation to the obstruction was two years and three months. The longest period intervening was twenty years. Deaver and Ross conclude their paper with the following statement: "A review of the entire mass of statistics upon this series of cases makes it evident that in almost every instance, in spite of symptoms so plain as to be pathognomonic, diagnosis has been tardy and operation delayed. Prompt diagnosis and immediate operation will reduce the mortality in acute intestinal obstruction to a mere fraction of that encountered at present."

Guillaume[6] has compiled 587 cases of acute ileus given operative treatment by different methods and states that 224 died within the first forty-eight hours. The total mortality by the end of the second week was 50 per cent. His charts show the rapid rise in the death rate as the days pass after the first symptoms.

Moynihan[12] states that anything over a 10 per cent mortality (which should be obtainable) is the mortality of delay.

TREATMENT

The prophylactic treatment is most important. In abdominal cases the surgeon should handle the intestines as little and as gently as possible. Raw surface should be covered over with peritoneum and care should be exercised in avoiding injury to the abdominal wall with retractors. The patient should not be allowed to lie in one position continuously during convalescence.

In the active treatment too much emphasis cannot be placed upon early action. There is no more perplexing problem in all surgery than to decide when to reopen the abdomen with the symptoms of postoperative ileus. Murphy[15] states that delay in operating for intestinal obstruction is more fatal than delay in any other abdominal lesion, except acute gastrointestinal perforations into the free peritoneal cavity.

It is good practice, when in doubt concerning postoperative ileus, to explore. Mayo[9], discussing this point in an article on intestinal obstruction, makes the following statement: "In many years of active surgical work I have not seen death occur as the result of unnecessary exploration. I have seen many patients saved and some die of disease, but many died solely because exploration was undertaken too late."

Preliminary to the operative work the stomach should be washed out, the lavage continuing until the fluid returns clear. Unless this is done, vomitus flows forth as soon as the anesthetic is begun and may find its way into the larynx. The least amount of anesthetic should be given.

When the obstruction occurs early in the convalescence, the abdominal incision should be reopened. Operation for obstruction after five days should be made thru a separate incision, as the cause of the obstruction may be an infection in the primary wound which has caused bowel to adhere at the infected point.

In locating the obstruction, Murphy[15] followed a definite plan which he had used for many years. First, the sigmoid was exposed, unless a contracted coil of small intestine was seen in the field when the abdomen was opened. In the latter event the ileocecal valve was sought because the obstruction would lie above that valve. The small intestines were then passed thru the fingers, keeping them all the time within the abdomen.

Mayo[9], discussing the treatment of postoperative obstruction, makes the following statement: "In postoperative obstruction, if the abdomen is opened within twenty-four or thirty-six hours after the beginning of symptoms, the filmy adhesions causing kinks or twists can be separated with little difficulty, and with immediate benefit. Later, but little exploration is advisable for the purpose of ascertaining the cause or exact location of the obstruction, and enterostomy, as advised by Nelaton, should be made for relief. If the obstruction has followed pelvic operation, an ileostomy may afford marked relief; a high obstruction demands jejunostomy for drainage or for nutritional purpose, and if the obstruction follows a gastroenterostomy, the passage of a catheter into the stomach and down the jejunum thru the gastroenterostomy will accomplish the same results without narrowing the lumen of the jejunum."

The good effects of enterostomy in obstruction of the bowel following abdominal operation cannot be emphasized too strongly. Mayo[10] states, "The procedure is a simple one of itself, and life saving in a large percentage of cases where the conditions are recognized, and the procedure applied before it is too late. As a rule, it should be instituted by the end of the third or possibly as late as the fourth day. The fifth day and later will often prove too late. Usually no general anesthetic is required. A local application of 0.5 per cent novacain and a little adrenalin will be sufficient. As a rule upon reopening the wound the distended bowel comes into the opening and a tube can be inserted. If the patients survive twenty-four hours, following the insertion of the tube, most of them will recover. The difficulty, whatever it may be, passes off, and few of them require further operative procedure than the enterostomy."

Again quoting Mayo[11], "The inestimable value of enterostomy, when the operation is indicated, is apparently not appreciated by the medical profession. Certainly the prompt relief secured when it is made either for alimentation or for the relief of obstruction is so immediate and effectual that the slight hazard and simplicity of the operation should not weigh in the balance in leading to delay in its application. The operation is of the greatest importance in relieving obstruction which occurs within a few days after a laparotomy."

In conclusion, the statement should be made that by doing away with procrastination in all cases of postoperative obstruction and rendering prompt diagnosis and immediate surgical measures, many unnecessary surgical tragedies will be avoided.

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DIAPHRAGMATIC HERNIA. CASE REPORT.

M. E. Steinberg, M.S., M.D.

AND

F. B. Patterson, M.D.

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V. F., age 22, a carpenter by occupation, applied for treatment at the U. S. Veterans Bureau, Jan. 1, 1922, complaining of "gas in the stomach" and aching and tiring of the left leg.

Family history negative. The patient was perfectly well until June 5, 1918, when he incurred an injury in a collision between an automobile and the motorcycle he was riding. His pelvis was fractured and blood was found in the urine. There was pain in the left side of the chest and in the left shoulder. About a month after the accident various other symptoms appeared, such as a feeling of distension in the abdomen and vomiting spells. There was also pain in the epigastrium upon deep inspiration.

Examination revealed a well nourished adult; respiration was slow and not embarrassed. Both sides of the chest moved equally at each inspiration. The percussion note was tympanitic in the left lower axilla. There was a dull note in the left base.

Breath sounds and voice sounds were poorly transmitted thruout the left lower axilla and the left base. In an area anterior to the midclavicular line, between the third and fifth ribs, the resonance was increased. The pulse was regular in rhythm and force and of good quality. The apex beat was not visible but palpable in a diffuse area. The area of the cardiac dullness was within normal limits. The heart sounds were normal and there were no murmurs heard. Blood pressure, systolic 116, diastolic 88.

The examination of the gastric contents revealed the free acidity to be 30 degrees and the total acidity to be 56.

Screen examination: There was observed to be, just above the left half of the diaphragm, a collection of fluid. The fluid had an unmistakable level, which was proven in the following manner. The patient was directed to flex the trunk upon the body from right to left. The fluid maintained a parallel with the floor. Just above the fluid there was a collection of air. The right half of the diaphragm was definitely made out and occupied its normal position and presented a normal shadow. Extending from the hilus on the left side, upward as far as the anterior end of the second rib, then downward parallel with the lateral chest wall to the diaphragm there was a dense, band-like shadow. At first it was thought to be a circular pleuritic thickening, but was proven afterwards to be the walls of the stomach. There was also a dense band-like shadow extending directly upward from the dome of the left

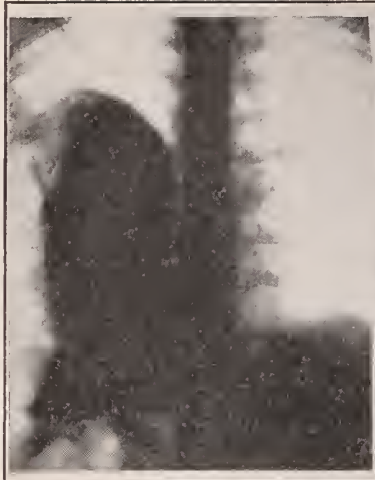

Fig. 1

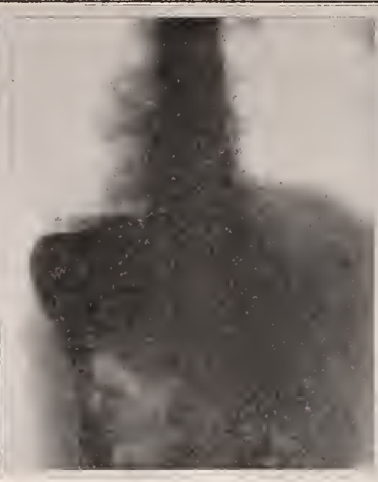

Fig. 2

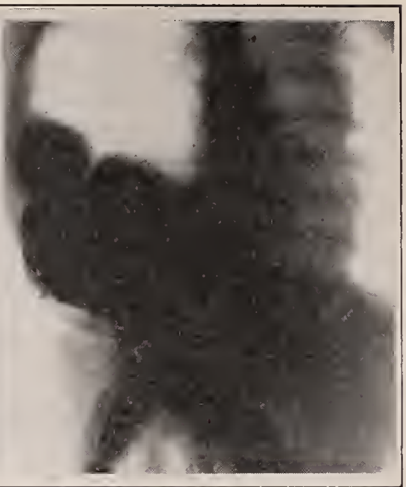

Fig. 3

Fig. 1. Recumbent position, showing the entire stomach in the chest cavity.

Fig. 2. Five hour radiograph, showing the gastric residue.

Fig. 3. Opaque enema, showing the splenic flexure and almost all of the transverse colon in the chest cavity.

diaphragm. This was proven to be a thickened pleural band.

With the stomach empty there was very little displacement of the heart, the right border being displaced only very slightly past the right vertebral line.

An opaque meal was given and the following observed: With the patient in the upright position about two thirds of the stomach was in the chest. With the patient in the recumbent position the entire stomach passed into the chest cavity and extended as far up as the anterior end of the second rib (fig. 1).

The patient complained of no discomfort whatsoever. The stomach was extremely slow in emptying itself and at no time were we able to have any view at all of the duodenum.

At the end of the five-hour period about one third of the barium remained in the stomach. Radiograph was made at this time with the patient in the standing position. The outline of the stomach in this radiograph was observed very distinctly and the distal portion of the duodenum could be made out (fig. 2).

All the barium had passed at the end of the twenty-four hour period.

An opaque enema was given with no difficulty and with no distress whatever on the part of the patient, even tho a large quantity of barium passed into the chest during the injection.

The opaque enema gave a very good idea as to the size of the opening in the left half of the diaphragm. We would judge that the opening is fully two inches in diameter. The barium passed very readily into the chest and just as readily passed out into the cecum (fig. 3).

From the large amount of barium that entered the chest from the opaque enema we expected the patient to have some cardiac distress, but such was not the case.

We wish to present the case for the following reasons: 1. In all probabilities the opening in the left diaphragm was caused at the time of the injury to the pelvis, by a sudden increase in intraabdominal pressure. In this type of violence it is practically always the left diaphragm which ruptures, because the right is protected by the liver.

2. The initial symptoms in this case, such as pain in the left shoulder and the left chest, nausea and vomiting following the injury, appear to be the same in most cases of acute diaphragmatic rupture.

3. Four years afterwards the clinical symptoms were indefinite and out of all proportion to the extent of the hernia, as revealed by roentgenologic findings.

CERVICAL SYMPATHECTOMY FOR ANGINA PECTORIS

The development of the operation of resection of the cervical sympathetic ganglions, its technic, and the innervation of the heart are reviewed by Albert E. Halstead and Frederick Christopher, Chicago (Journal A. M. A., May 24, 1924). In the method employed by the senior author, the incision is made at the anterior border of the sternoclidomastoid muscle. This muscle and the carotid sheath and its contents are retracted posteriorly instead of anteriorly, as in Jonnesco's operation. The balance of the operation is along the lines laid down by Jonnesco. In one case cited, only the middle cervical ganglion was removed, by avulsion. During removal of the ganglion, the left pupil was dilated and tears came from that eye. The patient's condition was excellent thruout the operation. The postoperative course was of interest. There was a transitory impairment of the left lower lip, which did not have its full motion. Both the pupils reacted to light and in accommodation. On the second day after operation, the blood pressure was 154-100; on the third day 150-90; on the sixth day, 178-100; on the seventh day, 184-102, and on the ninth day, 178-100. This wound healed cleanly, and the skin stitches, which were the only ones that had been used in the closure, were removed on the sixth day. The patient was discharged from the hospital on the tenth day, and her convalescence at home has been steady and rapid. Save for a mild attack about four weeks after the operation, there have been no anginal attacks, and the diminution of the blood pressure has persisted to date (May 8, 1924).

EPIDEMIC ENCEPHALITIS TREATED WITH MERCUROCHROME. REPORT OF TWO CASES *

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TWIN FALLS, IDA.

The report of the successful use of mercurochrome-220 soluble intravenously, by Young and Hill[1] in septicemia, prompted its trial in equally desperate cases of epidemic encephalitis. The improvement in the two cases herewith reported was so prompt and so marked that I am reporting them without waiting for a longer series.

Case 1. V. J., a sixteen year old farmer boy, whose past history was negative, developed a typical moderately severe case of measles on April 6, 1924. There were no unusual symptoms until April 11, when Dr. C. D. Weaver, my associate, was called to see him because of urinary retention. He found that the boy showed mental confusion and emotional depression. His temperature was 102° and his pulse was 100. On April 25 he was brought to the Clinic and Dr. Weaver asked me to see him.

Examination showed a well developed, well nourished youth weighing 140 pounds, who appeared sick. He had a worried, anxious expression and cried a good deal. His speech was slow and monotonous, and its content was rather childish. His temperature, pulse and respiration were normal, and the physical examination was negative aside from exaggerated tendon reflexes and a bilateral ankle clonus which was more marked on the left. The plantar reflex was lively and there was no Babinski. There was a leukocytosis of 12,000 and the blood Wassermann was negative, as was also the urine.

We saw him again during the night of April 30, at which time his condition was critical, a bad prognosis was given and he was removed to the hospital. He had failed rapidly in the last three days, being extremely restless and unable to sleep. He spoke with great difficulty, and very indistinctly. Examination showed marked spasticity of all skeletal muscles, which was so marked on the left that he was unable to move his arm or leg. Bilateral ankle clonus was still present and Babinski's sign was also present on both sides. His neck was stiff and Kernig's sign was bilaterally positive. His pupils were widely dilated but reacted to light. There was a leukocytosis of 16,000. Six c.c. spinal fluid were withdrawn under somewhat increased pressure, but there was no pleocytosis. The globulin and spinal fluid Wassermann tests were negative. He could not drink from a glass, as his lips were spastically contracted and his tongue felt stiff. He swallowed liquid, however, when given thru a dropper. He was much depressed emotionally, crying loudly much of the time.

At 8 p. m., April 30, I gave him 10 c.c. of 1 per cent solution of mercurochrome intravenously. The next morning he was much better. He could speak quite clearly, could drink from a glass and could move his left arm easily. That evening he was given 8 c.c. of 1 per cent mercurochrome intravenously, which was followed by continued rapid improvement. The Ankle clonus and Babinski disappeared on the second day and the generalized spasticity and speech difficulty rapidly improved. The emotional instability was slower in disappearing, but within a week he was again perfectly quiet and happy. He left the hospital May 11, just twelve days after the first injection of mercurochrome apparently entirely well. The only residual was a slight spasticity about the lips. The first day of hospitalization his pulse varied from 108 to 140, but four days later it was 74. The highest temperature recorded was 99.6° on the third day. The last week it frequently went as low as 96°.

Case 2. F. W. B., a 51 year old farmer, weighing 140 pounds, whose previous health had been fairly good, complained of fatigue and of stiffness in the feet and legs after his usual Sunday afternoon nap. He spent a rather restless night and early the next morning, May 12, 1924, his wife found that he was unable to talk, and that he was tossing about the bed in evident pain.

At 9 a. m. I saw him with my associate, Dr. R. R. Craft, at which time his temperature was 98° pulse 70, and respiration 18. His white blood count was 6,500. The urine and blood Wassermann were negative. His face had a wild staring expression like a hideous mask. The pupils were large, but reacted to light. His reflexes were normal, but there was marked cutaneous and deep hypersensitiveness. Movements were slow and very clumsy. The physical examination was otherwise negative except for several carious teeth.

The patient was removed to the hospital and at 12 noon was given 10 c.c. of 1 per cent mercurochrome intravenously. At 4 p. m. he started to improve and began to talk a little but very incoherently. He could not drink and it was impossible to get him to take medicine. At 8 p. m. there was still more improvement in his speech and his sensorium was a little clearer, but it was impossible to make him take medicine or to urinate. He seemed unable to understand commands. Catheterization was performed with the greatest difficulty, as the patient resisted in a confused and senseless manner. The next morning the change in his condition was spectacular. He was able to converse fairly intelligently, altho he was still somewhat confused. He urinated spontaneously and took soft food easily.

Twenty-four hours later his sensorium was perfectly clear and recovery seemed complete except that his facial expression was still a little masklike. This latter disappeared during the next twenty-four hours, and the patient was discharged from the hospital apparently perfectly well on May 15, three days after the injection of mercurochrome. The pulse varied from 88 the first day to 60 on the day of discharge, and the temperature varied from 99.4° after the mercurochrome injection to 96° on the morning he left the hospital.

CONCLUSION

The very prompt improvement in these two severe acute cases of epidemic encephalitis warrants more extensive trial of mercurochrome in the treatment of such cases. The dosage used was less than that recommended by Young and Hill[1] but in view of the untoward reaction reported by Bunten[2] it was thought advisable to use smaller doses and repeat if necessary. There was no unfavorable reaction with the dosage used. Freshly distilled water was used in making the solution, and the rate of injection was very slow, at least three minutes being taken for 10 c.c.

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* From the Department of Internal Medicine, Twin Falls Clinic.

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SEATTLE SURGICAL SOCIETY CLINICS

As a profession medicine is organized today as never before. To such an extent is this true that theoretically no organization at the present time can justify its activities, if not inspired by high ideals of public service or the definite accomplishment of indubitably beneficial results. The Seattle Surgical Society can meet this test. Founded as it was and successfully carried on as it has been by a nactive, energetic group of the younger surgeons of Seattle, it has steadily grown in professional confidence and public esteem. Meeting monthly, with an occasional special meeting called for the purpose of extending greeting and welcome to some distinguished visiting surgeon, their programs have been uniformly rich in surgical interest, and their scientific value enhanced by the wide variety of surgical problems presented and discussed.

That such a society so conceived and conducted should have some vehicle, thru which the results of its work might be better known, is obviously necessary, and it was with such a purpose that the Seattle Surgical Society Bulletin was launched and published annually. In place of this bulletin it is now proposed to utilize this journal. It would be manifestly impracticable to present all the papers and clinical cases of the year, but the present issue presents some of the outstanding ones, whose character and importance would seem to justify their preservation in permanent form. It is to be hoped that by their presentation thru the columns of NORTHWEST MEDICINE scientific thought and surgical endeavor may be stimulated thru the whole Northwest.

One of the noteworthy things accomplished during the past year was bringing Dr. Dean Lewis, of Chicago, to Seattle to conduct a series of surgical clinics and to deliver several lectures upon interesting and practical surgical conditions, thus presenting to the profession of this section of the Northwest the ripened judgment of a surgeon who not only ranks high as a teacher but whose opportunities for surgical work and clinical experience have been exceptionally rich. To this clinic a large number of the profession were invited, many of whom availed themselves of the opportunity.

THREE CASES OF BRAIN TUMOR

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ADENOMA OF THYROID, CYSTIC DEGENERATION OF THE PITUITARY

Case 1. Patient, 42 years of age, referred by Dr. H. H. Hewitt on July 28, 1923.

This patient is a well developed case of acromegaly who gives a history of having noticed one year ago a general enlargement of her face, especially of the nose and jaw, her hands and feet; her weight has remained about the same; her menstruation ceased about one year ago. About this time she noticed that her vision was decreasing, especially to each side (bitemporal hemiplegia). Headache is a constant symptom. It is deep seated and never absent.

Examination revealed the following condition: Eyes: Pupils fairly large; vision 20/200 right and left; a choking of each disc of 2 degrees; a partial scotoma of both temporal sides; a complete scotoma of both temporal sides about the macular region, extending upward and outward. The nose and face show typical appearance of acromegaly; hands large, fingers short and stubby; feet show same characteristic features of acromegaly (figs. 1 and 2). Patient complains of severe headache behind the eyes. She has a large substernal goiter which causes discomfort in breathing, apparently an adenoma.

Diagnosis was made of a tumor of the pituitary, the x-rays showing a widening and obliteration of the sellum. The x-rays of hands and feet showed typical appearance of acromegaly. She was referred to Dr. John Hunt for removal of the goiter. She was operated on at Providence Hospital, a large substernal goiter being removed, as shown in fig. 3.

Following the operation she returned to her home and on Oct. 26 returned for operation on the pituitary. A transfrontal operation was performed at the Swedish Hospital and a large cystic tumor was found, occupying the region of the pituitary, as shown in fig. 4. The patient recovered from the anesthetic, but did not seem clear mentally. She appeared to be in a daze and passed large quantities of urine involuntarily.

Examination of the urine revealed the presence of sugar. This condition persisted and on the second day she seemed to sink into the stupor of a diabetic coma. Dr. Hofrichter was called and prescribed insulin. The effect of the use of insulin was remarkable. She came out of her stupor promptly and under his treatment gradually improved until she was sugar free on Nov. 5. She left the hospital on Nov. 17. She was given thyroid and pituitrin at home.

About the first of January her daughter reported that she had had a convulsion. It was found that she had discontinued the use of thyroid. She was again put on pituitrin and thyroid extract and cleared promptly.

This case is of interest because it shows (1) acromegaly, associated with pituitary and thyroid degeneration. The large thyroid gland was removed prior to the operation on the pituitary, in order to give better respiration during the operation which of necessity would be long and tedious; (2) the development of a diabetic glycosuria, following the operation and its control by insulin; (3) the use of thyroid and the development of convulsions fol-

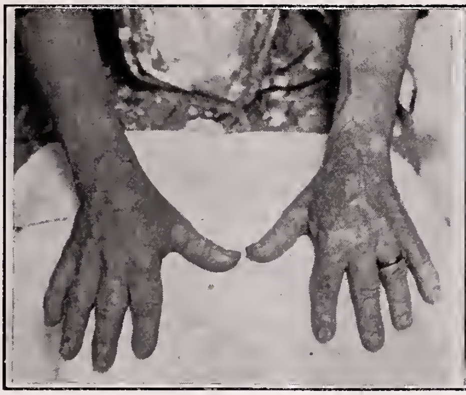


Fig. 1

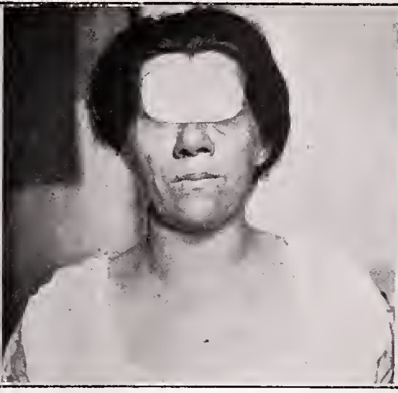


Fig. 2

Figs. 1 and 2 show hands and face of case 1, presenting well developed acromogaly.

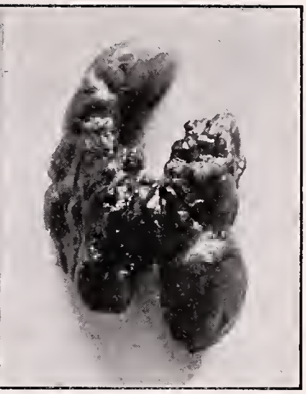


Fig. 3.

Fig. 3. Substernal goiter removed from case 1.

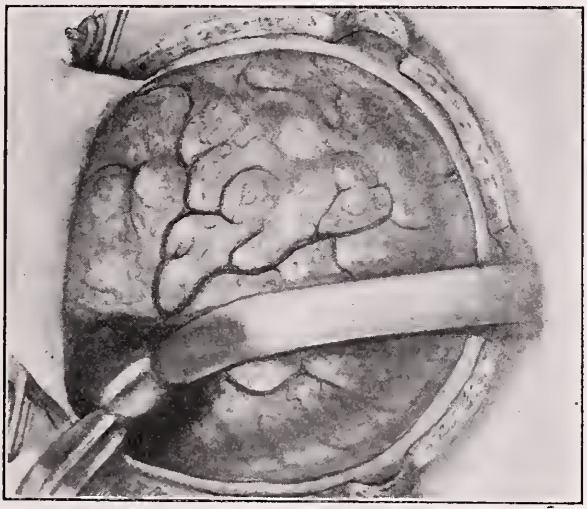


Fig. 4. Case 1. Pituitary cyst underlying optic nerve.

lowing its disuse; (4) the brilliant results, when considered from the standpoint of a poor operative risk.

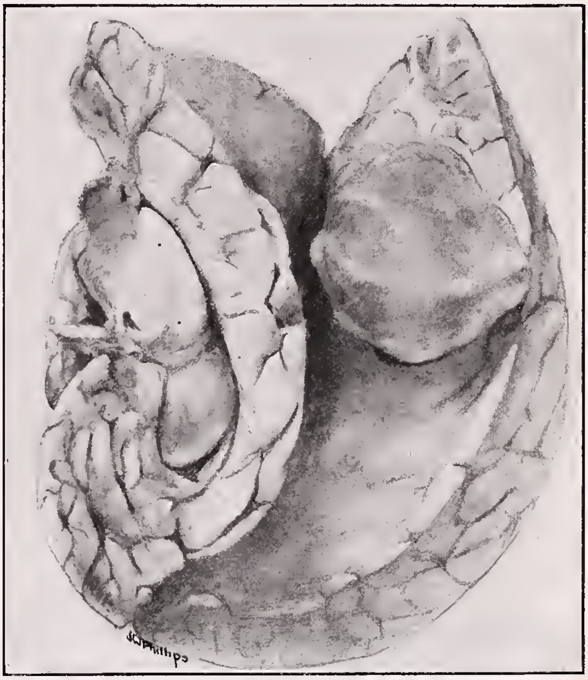


Fig. 5. Case 2. Large subcortical sarcoma in parietooccipital region, left cerebral hemisphere. Right hemisphere removed.

TUMOR, LEFT PARIETOOCCIPITAL REGION, SUBCORTICAL

Case 2. This patient was a male, 38 years of age, who gave the following history: Measles when a boy; no operations or accidents involving the head except for a knife cut on the face some twenty-four years ago; went thru high school; otherwise history negative until about sixteen years ago, when he had some difficulty while riding in a street car, hallucinations of some kind. This history was obtained from a friend.

The patient walked into the City Hospital on Dec. 7, 1923, and complained of headaches of two weeks' duration, frontal in character, a little difficulty in speech. missed a word now and then. He stated that he had a similar attack in July, 1923. Stated that he had vertigo a few days before having headaches and speech difficulty.

Patient was a well developed, well nourished man; apparently has been a hard working man. Examination revealed a symetrical head; pupils equal and prompt in reaction to light and accommodation; media clear. There was a definite congestion of both ocular fundi, but no edema of the discs; neck normal except for a few small palpable glands; chest normal in every way. Cardiovascular: slight sclerosis, no murmurs or thrills. Abdomen scaphoid and relaxed, no scars or palpable masses. Genitourinary negative, denies venereal disease. Skin normal; bones and joints normal; reflexes all present and equal; Babinski right and left negative; grips equal but perhaps a little weak; no tremor. Speech: he understood what was said, but could only speak simple words; he recognized objects, but unable to name them. Vision practically normal in both eyes. hearing normal in both ears.

This man was examined and in the absence of choked disc the spinal fluid was taken and the pressure found to be 21. On Dec. 13, Dr. Calhoun examined him and reported loss of abdominal reflex on left with mass reflex from plantar. Examination on Dec. 15 showed beginning choked disc right and left. Spinal puncture repeated, pressure 41; 20 c.c. air injected and x-rays taken; air not shown in A. P. Wassermann negative. Cell count 2; globulin negative.

Dec. 18 it was decided to inject air directly into the right ventricle. This was done and a large dilated right ventricle was found to be displaced to the right, while the left ventricle was found entirely collapsed.

The patient had been sinking rapidly for the past twenty-four hours and so it was decided to operate the following morning, altho it was believed that the tumor was probably too large to remove. The patient died during the night and the autopsy revealed a large tumor mass almost the size of an orange in the left subcortical parietooccipital region. It had extended beyond the mid-line, causing pressure against the right foramen of Monro, which caused the dilation of that side, collapsing the left side completely (fig. 5).

Conclusions. 1. A large subcortical tumor causing very few symptoms of any character and practically no distinct localizing symptoms.

2. The word aphasia gave the general site of the location, but not the enormous extent of the tumor.

3. The absence of early choked disc is accounted for probably because of the falure of the fluid from the right ventricle to escape thru the foramen of Monro.

The appearance of choked disc in the terminal stages was associated with a rapid decline in the patient's condition and probably was due to a general edema of the brain. There is no other way to account for this phenomenon.

5. The rise in the cerebrospinal pressure from 21 to 41 at this same time would also indicate a general edema.

6. The foramen of Monro on the right side was not patent, however, as the air did not enter from the spine.

7. The cerebroventricular study in this case was conclusive in every way.

8. The spinal method of approach having failed, the direct ventricular puncture was used to advantage.

ANGIOMA OF THE ARACHNOID

Case 3. Patient a well developed male, age 27, examined first on June 7, 1923.

History. Patient gave a history of having been in the service and of having had influenza in 1918, following which he began having severe pain in the left side of his head. After his discharge from the army this pain persisted and finally he noted spells, during which he was unable to talk and a feeling of numbness of the right hand with a drawing in of the fingers. These were practically the only symptoms the patient had noted and these had persisted.

Treatment. On June 9 a stereo x-ray of the skull was made which showed a thinning in the region of the left parietal bone, where it joins the frontal. On June 19 was seen by Dr. Dean Lewis of Chicago in consultation who advised an exploratory operation over the left parietal region, a tentative diagnosis being made of endothelioma of the dura.

On Sept. 4 he was sent to the City Hospital for the purpose of having air injected into the ventricles. His spinal pressure at that time was 28; the optic nerves were clear; 20 c.c. of air injected in the spinal column, following the removal of 25 c.c. of fluid. X-rays were taken of the ventricles and the spinal fluid sent to the laboratory for complete examination. The x-rays showed the air to be in the right ventricle, but none in the left. The spinal fluid test showed normal cell count; negative Wassermann and Noguchi; negative Nonne.

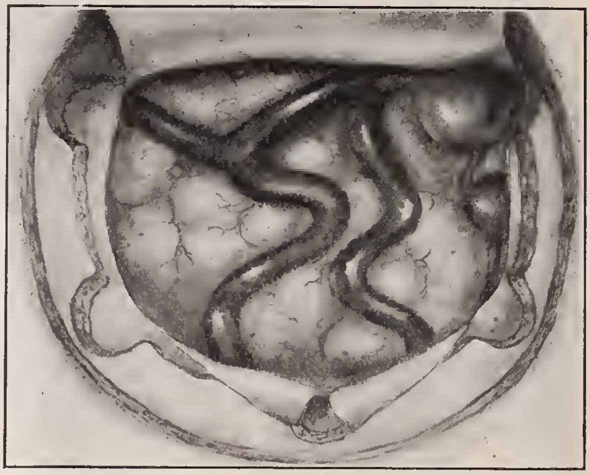


Fig. 6. Case 3. Subcortical angioma of left frontoparietal region. Operative field.

The week following he was anesthetized at the City Hospital and air injected into the ventricles by Dandy's method. The right ventricle was easily found, fluid removed and air injected, after which he was x-rayed for the left ventricle; no air was found to have entered the left ventricle from the right. A diagnosis was now made of a tumor, probably endothelioma, which was pressing on the left side.

On Oct. 10 a bone flap was laid down in the left parietal region; the middle meningeal artery tied and the dura opened. The dura was found to be very thick and adherent everywhere to the arachnoid, so that in separating a great deal of hemorrhage was encountered. When this was stopped, there was revealed a great net-work of veins, some as large as a large lead pencil, others the size of an ordinary fountain pen in calibre; one large aneurysmal dilatation appeared over the speech area in the frontal convolution. As the patient was quite weak, his blood pressure falling, it was decided to close and ligate at a subsequent operation. Diagnosis: Angioma of the arachnoid, left.

The patient recovered nicely from this operation. His condition was fully explained to him and he requested a second operation for the purpose of complete ligation to relieve pressure. This was accordingly attempted on Oct. 20 but was unsuccessful. The accompanying illustration shows the enormously distended vessels on the surface of the cortex of the brain. Below the cortex was a huge mass of veins, a subcortical angioma.

Points of interest in the case are:

1. Absence of positive clinical symptoms in the presence of so large an angiomatous mass.

2. Localization, assisted by means of Dandy's ventriculography.

3. Operative possibility in this case: Had an extensive resection of the left cerebrum been attempted, it is questionable whether it might have been successful.

ELECTRIC BURN OF SKULL

WALTER KELTON, M.D.

SEATTLE, WASH.

This case, Mr. E. C. A., was brought into the hospital August 27, 1923, having come in contact with an electric wire, while at his work in the Nettleton Lumber Mill.

Examination: Upon arrival at the hospital, about 6:30 p. m., he was in a state of coma. There was a slight, apparently superficial burn about the size of a half-dollar over the right temporal region, and a second burn about three inches long through the scalp and exposing the skull at the vertex.

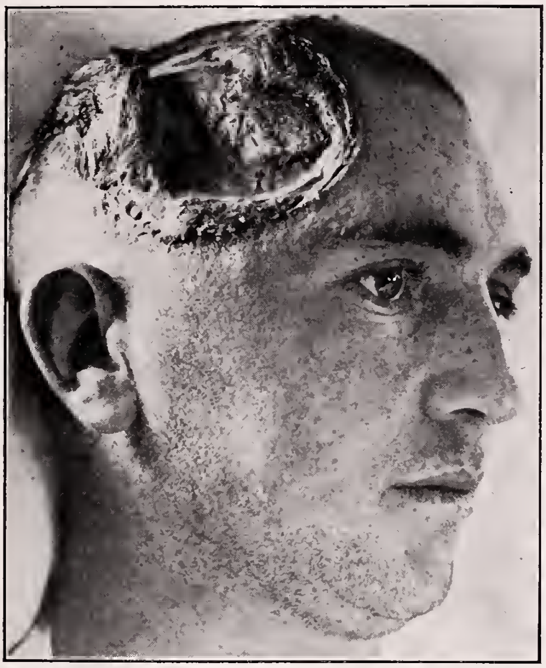


Fig. 1. Slough of scalp, showing wound of skull.

On the next day the patient had aroused from his comatose condition. Tremendous edema had set in. This edema steadily increased; sloughing began in the upper wound and was quickly followed by sloughing of the wound in the temporal region, the two eventually coalescing and the entire area from orbit to occiput formed a sloughing gangrenous mass (see figs. 1, 2, 3). The sloughing continued until there was an area eight inches in length and a little over four inches in width, of completely denuded skull. All of the scalp over this region sloughed away, the periosteum over almost the entire area being totally destroyed and the skull itself being charred over a considerable portion of it. The temperature ranged from 101 to 104 degrees, and the patient had repeated severe chills.

The patient steadily declined in weight and upon Oct. 2 severe vomiting of an expulsive character developed. This recurred repeatedly until he was unable to retain food.

On Oct. 7 Dr. Geo. W. Swift was called in consultation and his examination of the eye ground showed a double choked disc. The spinal pressure at this time was 62 mm. of mercury, the pressure being relieved by withdrawing a considerable amount of spinal fluid. (The vessel was upset and the amount of fluid withdrawn was therefore not recorded.) This was positive evidence that there had developed either edema, or abscess of the brain.

Operation No. 1 (Oct. 11, 1923), Seattle General Hospital, by Drs. Walter Kelton and Geo. W. Swift.

1. Removal of practically the entire outer table of the skull from orbit (and including portion of the orbit) to occiput, and for width of about four inches.
2. Trephining over upper temporal region, and evacuation of cerebral abscess. Half pint of pus removed.
3. Trephining over parietooccipital region; removal of charred inner and outer table of skull.
4. Scalp flap on pedicle six inches long and four inches wide, taken from left side of parietooccipital region and transferred to cover posterior area of brain and skull (see fig. 4).

For several days following the operation the outlook was not very bright. The abscess was kept open by rubber drain and after a few stormy days improvement was steady. Temperature dropped to normal, tho vomiting still was persistent for eight

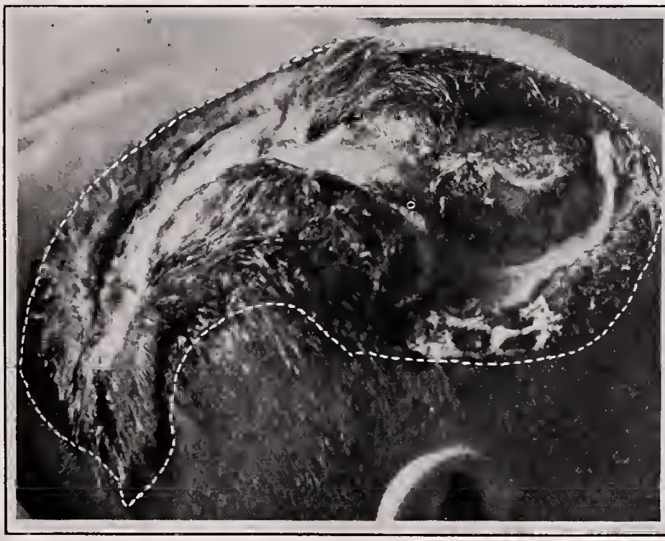


Fig. 2. Shows scalp retracted and area of exposed skull. Dotted line surrounds gangrenous area of scalp which sloughed away.

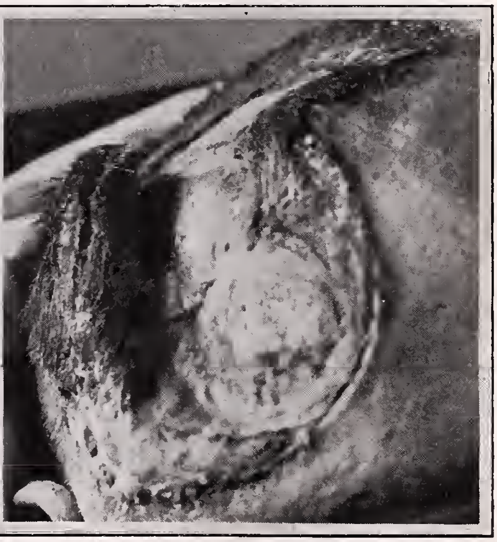


Fig. 3. Shows area of sloughed scalp.

days. Thereafter this unpleasant feature disappeared and the patient gained in weight and strength, but there had developed a cerebral hernia, the size of a small orange, at the site of the abscess over the temporal region.

Operation No. 2. (Dec. 1, 1923) Seattle General Hospital, Dr. Donald V. Trueblood assisting.

1. Removal of about one-half teacupful of brain tissue (cerebral hernia), protruding thru the opening in the skull over the temporal region.
2. Suturing the dura and closing the hernial opening.
3. Transfer of scalp flap on pedicle six inches long by three inches wide from the occiput to cover the defect over the temporal region (see figs. 4 and 5.)

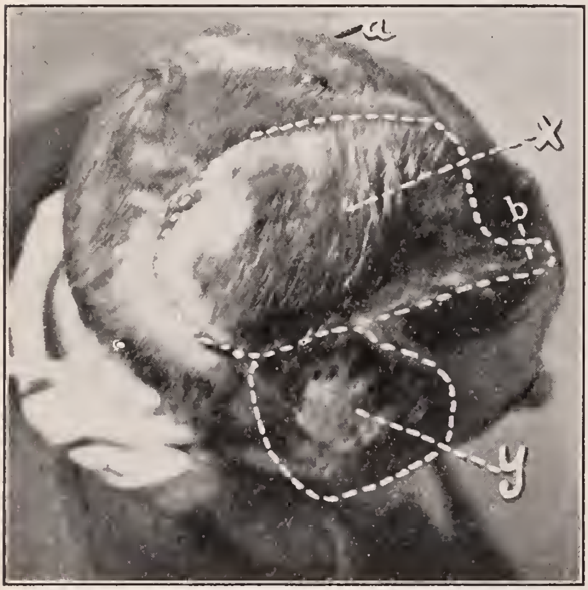


Fig. 4. X is flap taken from left parietooccipital region below A, to cover upper posterior denuded area. Pedicle of flap at B. Y is cerebral hernia, size of small orange.

Recovery from this operation was uneventful, the patient continuing to gain in weight and strength until Jan. 9, 1924, when he was again operated upon for the purpose of closing the denuded areas from which we had borrowed the scalp flaps.

Operation No. 3 (Jan. 9, 1924), Seattle General Hospital, Dr. Donald Trueblood assisting.

Pinch skin graft from leg to cover denuded area from which scalp flaps were removed. There was slight infection so that some of the graft did not take.

Results. The photographs, showing the tremendous destruction of tissue and those taken after the series of operations was ended, show a cosmetic result decidedly gratifying to the operator as well as to the patient.

This young man is active, light hearted, and complains very little of the nervous symptoms usually accompanying such severe brain trauma. Also there has been very little headache complained of, and this only when he has attempted to do heavy physical labor.

Remarks. This case is interesting, first, because it brings out so markedly how deceiving these electric burns are; and the tremendous sloughing teaches a lesson of caution in prognosis in any electric burn, even tho trivial in appearance. Second, it is of interest because it shows how a patient so wrecked, from the standpoint of physical appearance, can by persistent and patient surgical endeavor be brought back to an appearance which is not greatly detracting.

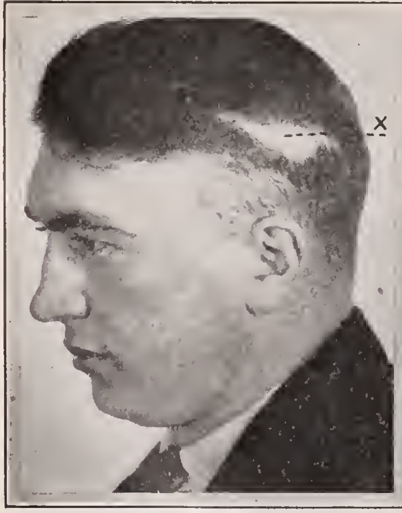


Fig. 5.

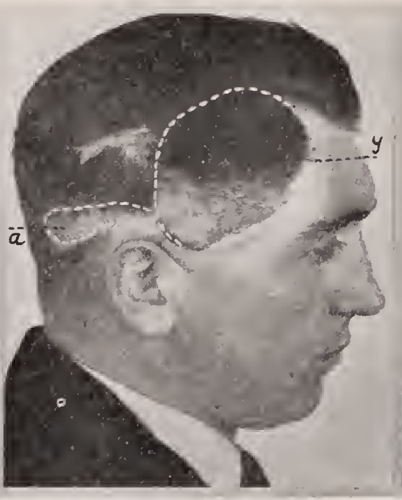


Fig. 6

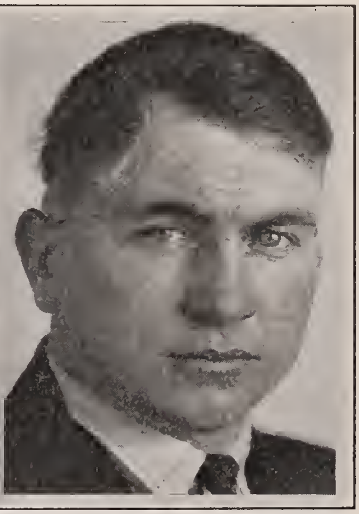


Fig. 7

Fig. 5. X is location, whence flap X in Fig. 4 was taken. Note small remaining denuded area, compared with large flap removed.
Fig. 6. Y is pedicled flap covering cerebral hernia.

Fig 4. A is location, whence flap Y was taken. Note small remaining denuded area, compared with large flap removed, which was covered by skin graft.
Fig. 7. Shows final result.

PERNICIOUS ANEMIA OF FOURTEEN YEARS DURATION

WILLIAM C. SPEIDEL, M.D.
AND
CLARK C. GOSS, M. D.
SEATTLE, WASH.

The patient, hotel clerk, 57 years of age, entered King County Hospital Sept. 13, 1923, complaining of weakness. He stated he had been in good health until 1910, when he began having weakness and stomach trouble, the latter consisting of gas and nausea after eating. He had no pain at that time. He went to Lane County Hospital, San Francisco, where his trouble was diagnosed as pernicious anemia. He was sick two or three months at that time, after which he regained his health sufficiently to resume his work. In 1913, he began having poor health again and entered another hospital, where during his stay he had typhoid fever. After a period of two to three years more of poor health, he had fair health until one year prior to this hospital entrance.

During this past year, he felt himself going downward, gradually growing weak, with a recurrence of his old complaints of gas on the stomach, nausea after eating and also on exertion. His appetite was poor, bowels constipated, having to take cathartics regularly. He had no cough, no night sweats nor had he any rapid loss of weight, but he had lost about fifty pounds since the original onset of his trouble in 1910. For the past two years he had no sense of smell; he complained of generalized numbness, in fact felt that all his senses were becoming dulled. He had scarlet fever when young, a soft chancre twenty years ago, and gonnorhea four times during his lifetime. His family history was negative.

He had been so extensively treated for pernicious anemia during the past thirteen years that he had familiarized himself with all the details of usual routine treatment and was in the habit of having blood counts made at intervals to "see where he stood." Just prior to his entrance he had ten daily intramuscular injections of iron and arsenic compound.

Physical examination revealed a fairly well nourished, but anemic man about 55 years of age, in no immediate discomfort. Vitality fairly good, mentality good, skin pale and sallow. Pupils showed inequality, but reacted well to light and accommodation. There was a small subconjunctival hemorrhage of left eye, which he said had appeared spontaneously two weeks previously. Teeth were in bad condition, there being considerable pyorrhea. Heart and lungs were negative. Spleen was not palpable. There was some tenderness over the gallbladder area. There were a few palpable lymphatics in either inguinal region. The mucous surface of the foreskin on the right bore an old scar of a sore. There was an existing small annular fissure on the superior surface of the foreskin at the mucocutaneous juncture, which he stated had recurred at intervals for years, and which we took to have an herpetic origin. Knee kicks were absent, Babinski neutral, biceps normal.

Laboratory findings were as follows: Urine :1,022 sp. gr., albumin 2+, hyalin casts 1+, pus and blood cells 2+. These pathologic findings we ascribed to the arsenic injections he had just had, as the urine soon became negative. Blood count: r. b. c., 1,520,000; w.b.c, 6,200; hemoglobin, 38 per cent (Dare) no megaloblasts, no normoblasts, considerable anisocytosis and poikilocytosis. Blood: Wassermann negative. Gastric contents: Free HCl o, total acid 9.

With these findings we made a diagnosis of pernicious anemia and placed him on routine treatment, supplying arsenic, after the urine became clear, by a weekly intravenous injection of neosalvarsan, beginning with 0.3 gm., later giving 0.45 gm. A course of eight injections was given with no improvement, either symptomatic or anatomic, the patient's hemoglobin and r.b.c. going steadily downward. All the usual various measures were then resorted to with similar results. Two months after entrance his hemoglobin was 35 per cent., r.b.c. 968,000, w.b.c. 1,800. One normoblast and two megaloblasts were found; anisocystosis and poikilocytosis very marked.

All the patient's former symptoms gradually became accentuated, his weakness becoming exhaustion, added to which was sleeplessness, constant nervous tension and mental agony. However, life remained in him. Five months after admission, his hemoglobin had fallen to 19 per cent, r.b.c. 480,000, w.b.c. 2,050. No normoblasts nor megoblasts were found.

At this stage he was transfused, a suitable donor being found. He was given 500 c.c. of blood. Following the transfusion, he improved considerably, and has since lived in a comparative degree of comfort, altho his weakness is still extreme. At present writing gradually increasing edema is a feature of his case. A blood examination, made soon after transfusion, reveoled hemoglobin 25 per cent, r.b.c. 1,136,000, w.b.c. 3,050.

Being struck by the patient's statement that he had been diagnosed pernicious anemia in Lane County Hospital as long as thirteen years ago, we have obtained a record of his case while there, together with a record of his case while at Los Angeles County Hospital subsequently.

Lane Hospital reports that he was there for a period of eleven days in December, 1910. His chief complaint at that time is not mentioned, but the report states the patient gave a history of jaundice of three years duration; also of lues and exposure to lead. In appearance he was pale, sallow and waxy, with swollen eyelids. Mucous membranes showed extreme pallor. Inguinal, axillary and epitrochlear glands were palpable. All reflexes, tendon and skin, were normal. A systolic murmur was found, systolic blood pressure was 100.

Blood examination as follows: Hemoglobin 50 per cent, r.b.c. 2,000,000, 10 normoblasts, many megalocytes, marked poikilocytosis; w.b.c. 8,000, polys. 61, small lymphs, 34, eosinophiles 5. Blood Wassermann negative. Feces examination showed a trace of occult blood, considerable mucus, much free fat, soap crystals and undigested food. Stomach analysis was negative. Urinalysis negative.

The diagnosis made is not mentioned in the report, but on questioning the patient further about his stay there, he tells us he was shown in clinic to Stanford University medical students a number of times as a case of pernicious anemia.

The patient also verifies the history of exposure to lead, a feature of his history we had not obtained. Work in smelters constituted his exposure. Lane

Hospital reports no findings other than anemia, suggestive of lead poisoning. Lane's luetic history we ascribe to their probable reasonable doubt of the patient's story of soft chancre, which we can now take to be true in the light of our present observations on the case. We are unable to account for the stomach findings as reported. As noted above, they are reported negative. But the patient states he was given hydrochloric acid while there, and that it was the first time he ever knew anything about HCl.

The report of his case while at Los Angeles County Hospital states he was there on three different occasions, twice in 1912 and once in 1914. His chief complaint each time was the same, and consisted of weakness, difficulty in breathing and a peculiar nauseated feeling immediately after eating. He was slightly jaundiced. No details of physical or laboratory findings are mentioned except for his 1914 period. Then positive physical findings consisted of the liver being palpable two and a half fingers below the costal margin, a palpable and tender gallbadder and a palpable spleen on deep inspiration. Laboratory findings were as follows: Hemoglobin 50 per cent (Talquist). r.b.c. 2,500,000, some anisocytosis and poikilocytosis; w.b.c. 3.400. Blood Wassermann negative. Stomach analysis showed an absence of free HSl, urine and feces negative. The diagnosis was pernicious anemia.

There exist some irregularities in the argument that this was a case of pernicious anemia in 1910, notably Lane's report of negative stomach findings, and the absence of neurologic signs. Still it is reasonable to believe that the record of stomach analysis may be in error in view of the patient's statements, and especially since they are corroborated by the report of the case two and four years later, which we have received from Los Angeles County Hospital. Therefore, we feel secure in our belief that this was a case of pernicious anemia fourteen years ago.

NEUROFIBROMA

Homer D. Dudley, M.D.

SEATTLE, WASH.

This patient, operated on at Swedish Hospital, April 19, 1924, presented the usual history, symptoms, and clinical findings which are fairly typical of this type of cases. He comes in for the relief of pain in an amputation stump.

He is a fairly well nourished white male, age 38 years. Height 5 feet, 6 inches; present weight 120, former weight 135 pounds. Electrician by occupation.

There is nothing of interest in his family history or past illnesses. He has not been sick since infancy, altho at various times during the five-year period from 1915 to 1920 a trace of albumin was found in the urine. There were never any other abnormal urinary findings and he remained apparently in good health.

On May 30, 1920, he sustained a crushing injury of the left foot, with considerable soft tissue destruction and subsequent necrosis, probably due in part to posttraumatic local nutritional disturbances.

Accepting the patient's statements of events, a serous, secondary infection in the foot followed, which spread to the soft tissues of the leg and thigh and on June 30 an amputation was performed about the junction of the upper and middle thirds of the left femur. This wound was also infected and required more than two months thereafter for complete healing to obtain. Considerable time was then required for the swelling and induration in the stump to disappear.

The wound closed with the usual amount of scar tissue, characteristic of healing in the presence of infection. Ever since that time there has been some discomfort and sensitiveness in the stump, particularly in the line of the scar tissues. An artificial limb was fitted on Oct. 1, 1920, but it has never been worn with any degree of comfort because of pain. During the past years a highly sensitive spot about one mm. in diameter has persistently remained present in the scar line a little to the outer and posterior sides of the stump of the femur. When at rest there is usually no pain but light pressure over the involved area is excruciatingly painful, exciting muscular spasm and described by a sensation as if a red hot iron had been placed upon the skin, together with the feeling of "needles and pins" pricking the flesh and extending both up the thigh and down the leg.

At this time the skin and deeper tissues surrounding the painful area are normal and free of any pain or sensitiveness to firm, deep pressure.

There is some limitation to full, voluntary extension of the stump upon the abdomen, apparently due to restraining adhesions at the site of the amputation and traction upon the scar, involving the adherent and painful nerve stump. The remaining muscles of the thigh are markedly atrophic.

Examination reveals the localized, painful point, which is noninflammatory, dense scar tissue. A nodulation can be palpated. When the stump is flexed, a firm cord-like structure is easily palpated on the posterior surface, in the anatomic location of the great sciatic nerve, and extending down to the painful point.

It is our opinion, therefore, that we are dealing with a fibroneuroma, involving the distal end of the great sciatic nerve.

Amputation stumps of the leg and thigh are favorite sites for the development of fibroneuromata. A true ascending neuritis may develop in the affected nerves, in which instance removal of the tumor and distal portions of the nerve often fails to give relief. We operated upon such a case a few years ago, making a high excision of the ulnar nerve, which gave but temporary relief.

True neuromata, that is, where the tumor is composed of an excess of nerve tissue with a scant connective tissue framework, are said to be rare. It has recently been shown that, where a severed nerve produces an excess of nerve tissue, there is found to be an active proliferation of the neurofibrillae, which upon meeting resistance in their path of growth, curl upon themselves, forming hard, painful nerve tumors.

True neuromata, or fibroneuromata, may occur in the course of any nerve. They are usually multiple, may be painful or less commonly painless, involving single or many nerve trunks, are usually benign, but not immune to myxomatous or sarcamatous degeneration. The common variety is composed chiefly of fibrous tissue which develops in the connective tissue sheath or framework of a nerve trunk, and may contain a few nerve fibers of new formation. Most often the tender, painful, bulbous tumors growing on the ends of nerve trunks in the stumps of amputated limbs are fibromata. Histologically, therefore, these tumors are not neuromata and have been given the name of false neuroma.

The treatment is entirely surgical and, when it includes in its scope all the involved structures, usually effects complete relief of all painful symptoms. It is well to isolate the affected nerve trunk at some distance proximal to its involvement and make an intraneural injection of 95 per cent alcohol or 2 per cent osmic acid, then sever the nerve distal to the site of injection. These agents are alleged to produce an ascending degeneration of the nerve fibers and to inhibit or prevent the formation of true neuromata. It is unlikely that they modify the formation of fibromata.

A word about the prophylactic treatment of painful stumps.

1. Avoid infection as much as possible, since healing by granulation produces an excess of scar tissue and favors the inclusion of severed nerve ends and subsequent painful points.
2. Identify and sever all main nerve trunks well above the site of amputation.

The painful point was found to be the distal severed end of the great sciatic nerve, surrounded by dense, fibrous tissue, forming a nodulation about the size of the distal point of one's thumb, and firmly attached to the lower end of the stump of the femur. This explains why, upon extension, pain was produced at that point.

The nerve was freed to a distance of about five inches proximally, and an intraneural injection of 95 per cent alcohol was made. The nerve was then severed distal to this point and the proximal end promptly retracted well out of view. The wound was closed with one small, soft rubber drain, to be removed within twelve hours.

Pathologic Report. The hospital pathologist later reported this specimen to be a true fibroneuroma.

The patient left the hospital on the following day, and his convalescence has been uneventful.

311 Cobb Building.

* * *

HIRSCHSPRUNG'S DISEASE

Donald V. Trueblood, M.D.
SEATTLE, WASH.

This case seems worthy of report for two reasons: first, because the condition is comparatively rare; and, second, because we are able to show that this is a true Hirschsprung's. The patient, a baby boy ten weeks old, was referred to me by Dr. Arthur Gray who felt that surgery was indicated. The patient had come to him with a diagnosis of pyloric stenosis, with which opinion he did not agree.

The child was delivered normally. He was breast fed for about two weeks, when he began regurgitating his food. A diagnosis of pyloric stenosis was made and thick gruels instituted for feeding purposes. This procedure was not successful, consequently the child gradually lost weight and became quite emaciated.

When I saw the child, it looked more like a skeleton than a baby, covered with yellow skin, which was tightly stretched over an enormous abdomen. Respirations were rapid and the pulse was weak. Upon observing the abdomen more closely, peristalsis could be seen in the lower left quadrant and across the entire abdomen at the level of the umbilicus. This peristaltic wave was wide and gave us the first suggestion of Hirschsprung's disease. Enemas were given, each time obtaining some fecal material and considerable amount of gas, but there was no appreciable change in the distention. This distention was so great that the abdomen felt like a drum, was tympanic thruout, and undoubtedly was the major cause for the rapid respiratory rate.

X-rays were taken. The first, shown in fig. 1, displays an enormous transverse colon and dilated sigmoid. The second picture, fig. 2, shows that barium given by mouth passed immediately thru the pylorus and down into the small intestine, ruling out absolutely the diagnosis of pyloric stenosis. X-rays three and four, shown in figs. 3 and 4, demonstrate by means of the barium that the colon is dilated thruout its extent, the sigmoid being so long that it lies to the right of the midline,

Bright, in 1838, reported the first case of enlarged colon, but the medical profession was not impressed with this clinic entity until Hirschsprung's article on the subject in 1886, from which time this disease has borne his name. It is in reality a congenital, idiopathic dilatation and hyperthrophy of the colon. It is congenital because the patient does not acquire it after birth. Its cause is unknown, hence the title idiopathic. Inspection of the colon, finding the anatomic and pathologic changes of hypertrophy, makes the diagnosis conclusive. Hirschsprung's disease is often confused with other types of dilated colon which are caused by some mechanical obstruction either within or without the gut. These cases of giant colon are required, not congenital.

For the case at hand, it was quite apparent that something had to be done at once to relieve the mechanical obstruction which was depriving the child of its nourishment and to remove, if possible,

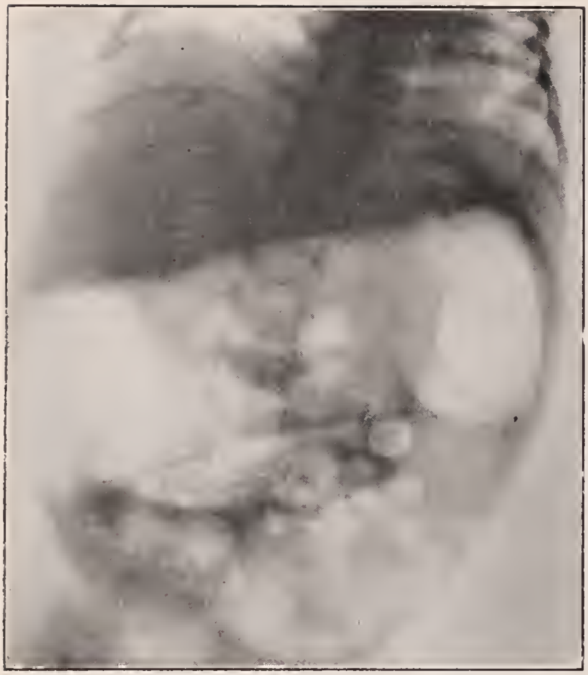


Fig. 1. Shows enormously dilated transverse colon and sigmoid.

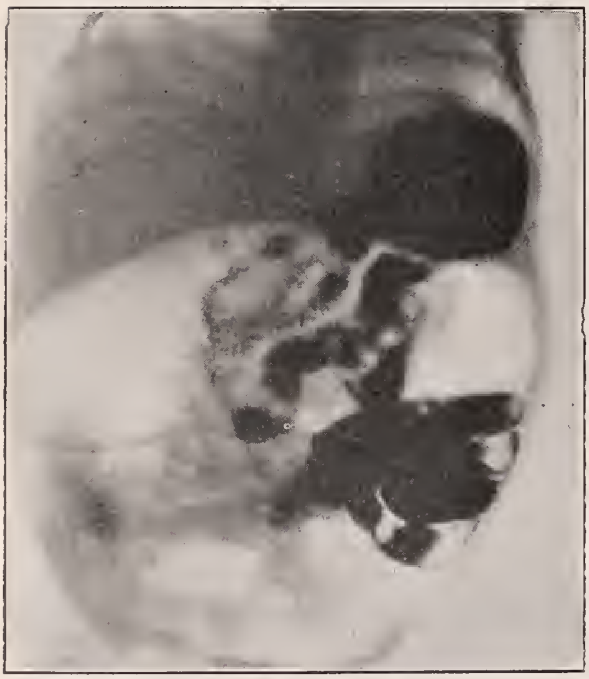


Fig. 2. Shows dilated transverse colon and sigmoid, which latter is plainly much elongated. It also shows barium in the stomach and some that passed thru to the small intestine, which organ is about normal in its contour. This picture was taken immediately after the barium was given, showing that the stomach empties rapidly.

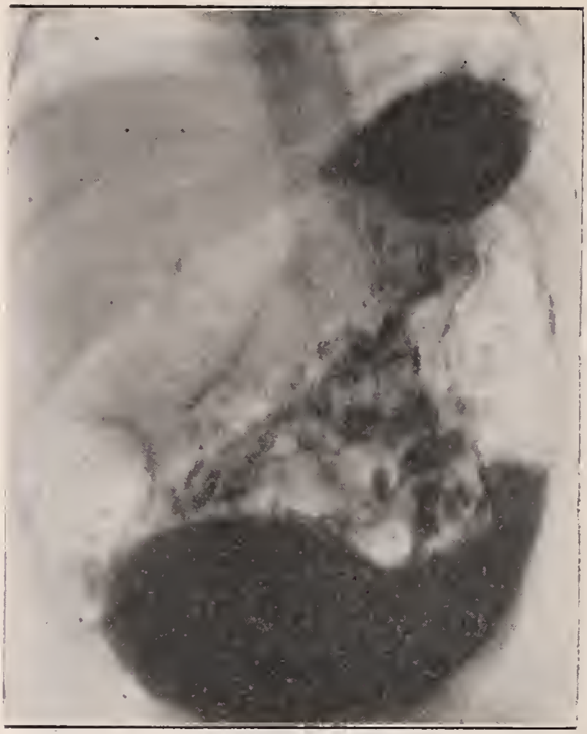


Fig. 3. Shows the barium thru the small intestine as well as the large one, outlining the latter organ very distinctly. A peristaltic wave is visible in the sigmoid.

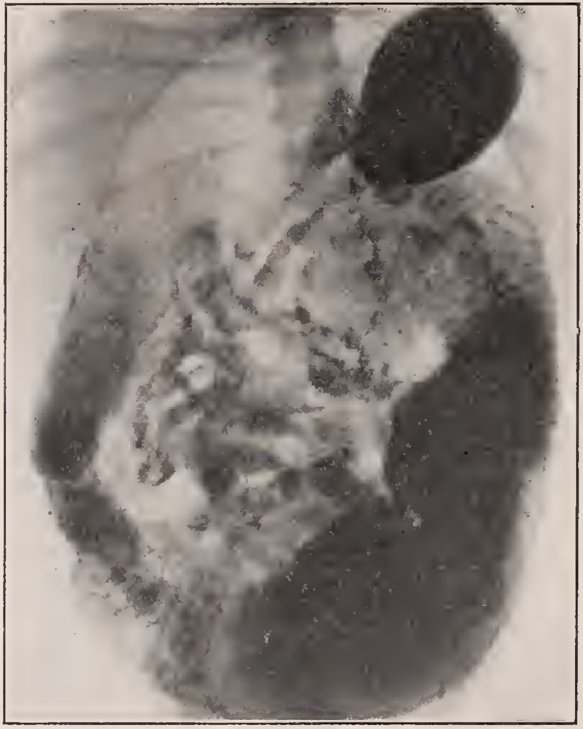


Fig. 4. Is practically the same as fig. 3, showing more clearly how the sigmoid extended over to the right quadrant.

the distention which was likewise interfering with normal functions. I decided to do an appendicostomy which would short circuit the large bowel and at the same time permit irrigation to be instituted thru it.

Under a light anesthetic a small incision was made in the right lower quadrant and a section of bowel drawn into the wound for inspection. This proved to be the sigmoid which was very much elongated and was surprisingly large in lumen and whose thick, stiff walls seemed most remarkable. There was much more body to this infant's large colon than to that of any adult that I have ever felt. It was quite vascular and responded with peristalsis to mechanical stimulation. The sigmoid was so long that every attempt to pick up the cecum was hindered by the sigmoid getting in the way. Finally the cecum was brought into the wound. It also showed the same anatomic and pathologic changes noted in the sigmoid. The appendix was freed from its mesentery and pulled into the incision, drawing with it a portion of the cecum, which portion was sutured into each layer of the wound with silk thread. The rest of the wound was sutured with the same material. The appendix with its portion of cecum was cut off by means of cautery. The patient's condition was as good as before the operation began.

The patient took its next feeding with vigor and retained it. Its temperature, which had been elevated, came to normal and remained so. For a week the patient showed gradual improvement, the distention having disappeared entirely, the respiration having returned to a normal rate, and the feedings having been entirely retained. At this time the baby contracted a respiratory infection and, because of its lowered resistance and the toxemia which often accompanies these cases, this respiratory condition developed into bronchial pneumonia and our patient died.

It seems to be, then, that this is a true case of congenital, idiopathic, megacolon because it possessed, first, the clinical symptoms, constipation, distention, emaciation, vomiting, and a shallow complexion; and, second, because it showed the typical pathologic changes in the large bowel at an age too young to have bee nacquired. The prognosis in all these cases is bad. They labor constantly under a chronic toxemia which lowers their resistance. In addition they are always undernourished.

The treatment is entirely surgical, either the removal of the entir ecolon or an anastomosis between the ileum and the sigmoid which is the ideal method. However, neither of these procedures could have been instituted in this weakened, undernourished baby. Had it survived and continued to improve, one of these more strenuous procedures would need to have been undertaken.

Eagleson Clinic.

TULAREMIA

J. Russell Verbrycke, Jr., Washington, D. C. (Journal A. M. A., May 17, 1924), reports a fatal case of tularemia simulating cholangeitis, with postmortem report said to be the first to be put on record. Also, it is the only case exhibiting jaundice at the onset. The case was one of infection from dressing market rabbits. Verbrycke, Jr., is of the opinion that while there are few reported cases of tularemia, there must be a large number not diagnosed. There is a considerable likelihood of a marked spread of the disease. Tularemia should be excluded in any continuous fever due to unknown cause. Also, its possibility should be thought of in certain cases of chronically enlarged glands. It is possible to make a positive diagnosis by serologic examination.

SUBPHRENIC ABSCESS

C. E. Hagyard, M.D.

SEATTLE, WASH.

This patient, admitted to Minor Hospital, June 13, 1923, had just arrived from Alaska, where he had been quite sick for four weeks. He is a large, well-built young man of twenty-nine and at the onset of the illness weighed 215 pounds. With the exception of an attack of influenza in 1918, while in the army, he has been well and active.

Family History. Father died of tuberculosis; mother has much stomach trouble; two brothers and sister are very well.

He is married but has no children.

About four weeks ago while on a fishing trip he got chilled. The following day he was stiff and sore. This condition did not improve. After lying down he found it difficult to get up on account of stiffness and soreness in the back. He had some fever and after a few days began to have profuse night sweats. An osteopath treated him for about ten days without improvement. Soreness, aching, fever, and night sweats continued and he rapidly lost weight and strength. About three days ago, on the ship, he suddenly developed a severe pain in the right side of his chest, which increased with deep breathing or coughing. Slight exertion caused extreme dyspnea and he had to be propped up in order to breathe.

During the past three days he has developed a painful, unproductive cough. His appetite is poor, bowels fairly normal, but he has become very nervous. He has lost forty-three pounds in weight.

Physical examination. The patient is a large, well-developed young man. Face is pale, lips cyanotic, and flesh flabby. Skin is moist and rather cold. He breathes rapidly and on slight exertion becomes blue and very short of breath. Examination of head and neck is negative except for moderately enlarged tonsils. Reflexes are normal. Heart seems to be moderately enlarged, tones are clear but weak, action rapid. In the lower right lobe of the lungs there is impaired resonance with diminished breath and voice sounds. Vocal and tactile fremitus are impaired. Respiratory movement is diminished on this side.

The abdomen is rather large, but is symmetrical and for the most part free from tenderness or rigidity. In the right subcostal region there is a sensation of discomfort and slight rigidity on deep palpation. In the right flank, on inserting fingers up under the ribs, tenderness and much resistance are elicited. Fist percussion over the back causes pain on both sides, but more on the right. His temperature is 101 degrees; pulse 110, rather weak; respiration 46. Blood examination shows a leucocyte count of 12,800; polys 80 per cent. Urine examination shows a specific gravity of 1024, trace of albumin, occasional hyaline cast, no pus. Wassermann negative.

X-ray report. Right base obscured by dense shadow. The upper limit of this shadow is more definitely shown in the erect posture and is between the sixth and seventh ribs posteriorly. The diaphragm cannot be made out on the right side. Below the diaphragm nothing definite can be made out. So far as the radiograph goes, a pleurisy with effusion is indicated.

A diagnosis of subphrenic abscess was made, the only clue to a possible cause being a history of a slight infection of a toe that he had had several weeks previous to the onset of this trouble.

The pathology in the pleural cavity and lower part of the lung, I believe, is of recent development and secondary to the trouble below the diaphragm.

On account of tenderness and rigidity high in the flank, and to avoid invading the recently involved pleural cavity, we have decided to attempt to reach the abscess thru a flank incision. An oblique incision, similar to a kidney incision, is made, exposing the fatty tissue around the kidney which shows no pathology. Higher up between the liver and the diaphragm we get a sense of boggy resistance. I now open into a large abscess cavity from which flows a considerable quantity of thick pus. The cavity is large, extending well up between the liver and the diaphragm, and it is with difficulty that I reach its upper limits. Two long rubber tubes are placed into the cavity, securely fastened, and the incision closed.

Following the operation there was a very profuse purulent discharge and a very rapid improvement in the patient's condition. It was interesting to see how rapidly his chest symptoms and findings cleared up. At present his wound is just about closed and he is very well indeed.

This case belongs to a type of subphrenic abscess that is relatively infrequent. I refer to those due to focal infection. I believe they are, for the most part, extraperitoneal and this may be of importance in influencing your method of approach. In the early stages they are, from their location, very obscure and difficult to diagnose. The x-ray is an invaluable aid. In this case the line of the diaphragm could not be made out and the picture shows principally the intrathoracic changes.

The more common form of subphrenic abscess is intraperitoneal. According to location these are divided by peritoneal reflection into right anterior and posterior, and left anterior and posterior. These are usually secondary to inflammation or perforation of abdominal organs, and in about 66 per cent of cases following abdominal operations.

In this connection, I will refer to a case I saw with Dr. Warhanik, and thru his kindness was able to follow thruout its course and report.

E. H., age 21, male, entered the Seattle General Hospital Sept. 6, 1922. He had been ill for two days with abdominal pain and vomiting. At the time of admission he had the typical Hippocratic appearance of general suppurative peritonitis, with cyanosis, clammy skin, distension, and board-like rigidity.

Operation by Dr. Warhanik disclosed a gangrenous appendix, a gangrenous area with perforation in the wall of the cecum and general suppurative peritonitis. Following the operation, his condition was precarious for some days but he then began to improve. However, after about two weeks, his temperature began to go up, and soon became septic in type. There was dulness with suppressed breath and voice sound over lower part of chest, white blood count 15,400.

X-ray report as follows: The right diaphragm shows a very high position and has practically no excursion. The entire right lung field shows a deficient aeration, with a shadow of slight density covering especially the lower portions. This shadow is not sufficiently dense to indicate the presence of consolidation or fluid but shows some inflammatory condition present.

The fixation and high position of the right diaphragm may be due to inflammatory condition either above or below the diaphragm, and I am not certain whether the inflammation above the diaphragm is sufficient to cause these findings or not. It is entirely possible that there is also an inflammatory condition below the diaphragm, giving the above picture.

A diagnosis of subphrenic abscess was made.

Operation by Dr. Warhanik. A portion of the tenth rib resected, pleural covering closed off by a line of sutures. Aspiration thru the diaphragm was negative. Incision showed the liver and diaphragm united by fibrinous exudate which had a colon odor. Separation down and back for a considerable distance opened into an abscess cavity, containing foul-smelling pus. Two long drainage tubes were inserted and drainage was very free. Temperature gradually went down.

Following the operation, his course was tedious and his improvement very slow. He was extremely emaciated. Fluid developed in the right side of his chest which required repeated aspirations. Seven weeks after operation his temperature and pulse jumped up. Radiograph showed a line of fluid level in the abscess, with gas above, and the fact that the drainage tubes, which had been gradually withdrawn, did not reach the cavity. The tubes were pushed up into the cavity and he began to improve, eventually recovering completely.

These cases are interesting in that they represent the principal classes of subphrenic abscess, one occurring in a healthy man with no history of illness except a slight infection of a toe, the other resulting from the involvement of the subphrenic region by the infection of a general peritonitis.

In both these were eventually present:

1. Signs of progressive infection, such as chills, increasing fever and leucocytosis.

2. Local signs, such as tenderness, low liver, and particularly those of extension to the pleural cavity.

3. Prolonged course with night sweats, loss of weight and strength.

Subdiaphragmatic abscess occurs with sufficient frequency to merit consideration in cases presenting persistent septic symptoms, particularly following abdominal operations. That they are not always easy to diagnose is shown by Lockwood's statistics from the Mayo Clinic, where out of 113 cases, 31 were found at autopsy.

The x-ray is very valuable in making a diagnosis but intrathoracic extension of the inflammation as in both of these cases offers opportunity for confusion. The mortality, without operation, is extremely high, probably 95 per cent, and with operation is not low, probably 40 per cent. Many of the fatalities are due to insufficient drainage. The convalescence is usually slow and often the prolonged sepsis results in serious complications and sequellae.

PERIARTERIAL SYMPATHECTOMY

A. O. Loe, M.D.

SEATTLE, WASH.

Periarterial sympathectomy, the operation of Jaboulay-Leriche, consists essentially of the removal of the sympathetic nervous system in the walls of the artery, a decortication, as it were, of the adventitia. This procedure has been advocated by these men and other surgeons for certain vasomotor and trophic disorders in the field of arterial supply.

The nervous control of the artery is from the sympathetic autonomic system which courses thru the adventitia and gives off perforating branches into the muscles, forming plexuses in the media which evidently regulate the vasomotor control. Continuous irritation or excessive irritability of a pathologic nature, either of central, peripheral or local origin, affecting the autonomic vasomotor system, may cause long enduring vasoconstriction and may cause insufficiency of the arterial blood supply, leading to ultimate terminal gangrene and death of that part. Leriche concluded that such disturbance of the vasomotor balance, such "dead locking" of the vasoconstrictors, could be obviated by breaking the continuity of the nervous pathway and control, contained in the adventitia. Experimentally he found that excision of the adventitia was followed, first by a diminution in the size of the artery and then by a subsequent dilatation with elevation of local temperature, augmentation of the arterial pressure and increasing amplitude of pulse oscillations. Consequently Leriche has suggested and has applied this surgical procedure to various lesions associated with angiospastic conditions of the artery walls, such as acroparesthesia, Raynaud's disease, scleroderma, thromboangeitis, trophic ulcers, x-ray burns, etc. He has published articles comprising a goodly number of cases and of many variety of lesions with almost uniformly excellent results.

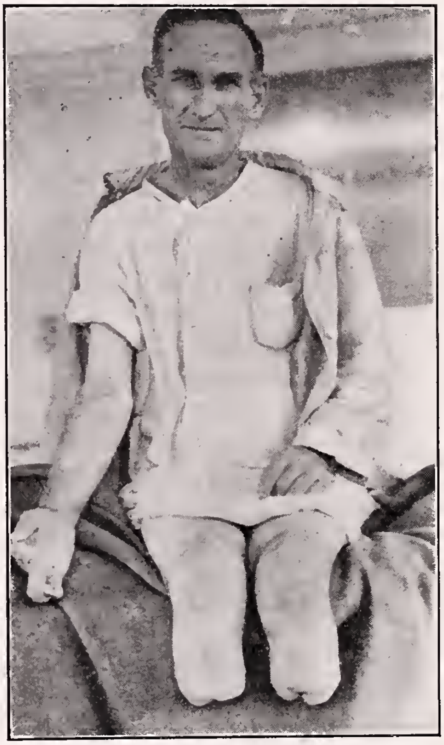
This operation has been undertaken in many instances by other surgeons and for a similar variety of conditions with results that have been, as a rule, less successful or fortunate than those reported by Leriche. Also, more recent discoveries in the anatomy and physiology of the sympathetic system have failed to explain in an entirely satisfactory manner the clinical phenomenona which Leriche has advanced. Such vasomotor conditions, especially in their terminal stages, are not as a rule amenable to other treatment and, in spite of the physiologic objections to Leriche's theories, it has seemed advisable to try the method in a clinical manner in cases that otherwise were hopeless. Such a case forms the subject matter of this report.

The patient, Mr. A. W., (see fig) is 46 years of age and admitted to the City Hospital on Nov. 2, 1923, complaining of painful fingers of the right hand.

Past history is of no special significance, except that in 1918 he had frozen both hands and feet. For some two years or so had at times pain and discomfort in the legs, finally leading to discoloration and gangrene of the feet, requiring amputation of both legs below the knees, which was done in 1920.

About two months ago began to have increasing trouble with the fingers of the right hand. They became alternately blue and white; at times swollen and tender; finally the fingers became numb and later on gangrenous in the terminal phalanges.

On Nov. 3 disarticulation of the distal phalanx of index finger and amputation of distal portion of the terminal phalanx of middle finger was done. Stumps never healed, in spite of daily dressings and warm applications. Fingers became painful to touch and there developed a beginning gangrene in the tip of the middle finger.



Case of Raynaud's disease. Previous multiple amputations. Recent periarterial sympathectomy.

Second operation was performed on Nov. 23. It consisted of amputation of index and middle fingers at middle of the second phalanx. The blood supply of the flaps was very poor and there seemed to be a regular line of demarkation in the middle finger. There was no healing, however, and gangrene readily reappeared in the amputation stumps. On Dec. 3 patient was operated on for the third time, when amputation of the index and middle fingers was done at the metacarpophalangeal junction.

There was no healing of the parts, in spite of all the attempts to stimulate the same. Pain in the fingers and hand became intense and consisted of a severe throbbing pain, both night and day, irrespective of the position of the hand. Large amounts of morphia had to be used and this with very little relief to the patient. Hand was white, shading to bluish color distally; fingers extremely sensitive to touch; radial pulse scarcely perceptible.

Previous procedures having been unsuccessful, periarterial sympathectomy was performed on Dec. 19.

Incision about four inches in length was made over course of the brachial artery just above the elbow and the vessel exposed by blunt dissection. Artery was rather small with moderately thickened walls, but lumen was not occluded. About 2.5 inches of adventitia was excised from off the entire circumference of the vessel without any special difficulty. Wound was closed in layers with interrupted sutures. Wound healed well. Immediately after the operation the throbbing pain ceased and the convalescence was entirely uneventful. Granulation tissue became vascular in the terminal portions of the stumps and the fingers and the hand assumed a normal color and warmth. No morphia was required postoperatively. Patient was discharged in good condition, hand was entirely healed and there has been no recurrence of the trouble during the past four months.

Comment. The consensus of opinion of those who saw this case was that it was a typical case of Raynaud's disease, whose etiology undoubtedly was associated with the freezing of his extremities several years before and which ultimately resulted in gangrene of the feet, requiring amputation of both legs.

The best results of this surgical procedure, as given in the literature, are associated with such angiospastic conditions. The results in the cases of thromboangeitis obliterans, embolic gangrene and diabetic gangrene have been uniformly poor and it seems to be contraindicated in these conditions. Just what the mechanism is, in view of the physiology of the nerve supply to the artery, is at the present time difficult to say. One can say, however, that in this instance periarterial sympathectomy produced an excellent result in a condition which obviously was not amenable to the usual surgical procedures.

CHRONIC SUBCROMIAL BURSITIS

Don H. Palmer, M.D.

SEATTLE, WASH.

A white, male, university student, twenty-three years of age, was admitted to the Seattle General Hospital, March 21, 1924, complaining of recurrent "dislocation" of right shoulder joint.

The trouble first began six months before entry. The patient was playing football, attempted to make a tackle, missed and slid on the ground with the right arm in extreme abduction. He says he felt something "give" in his right shoulder and for several days the top of the right shoulder was tender and painful, especially on abducting the right arm. Since that time, whenever the patient hyperabducts and rotates the right arm outwardly, the shoulder "becomes dislocated," "but always slips back when the arm is adducted and rotated inwardly," he says. Whenever this subluxation occurs, the right shoulder is tender for several days afterwards.

Family history and past history unimportant. Physical examination showed a well developed and nourished young male adult, with negative findings, except for right shoulder. With the right arm at the side, a small flat, almond sized mass could be felt below the acromion. When his arm was hyperabducted and rotated outwardly, this mass would slip underneath the acromion, and at the same time the head of the humerus would subluxate slightly over the lower, anterior rim of the glenoid fossa. The subluxation reduced readily when the right arm was rotated inwardly and adducted.

Operation. This man was operated upon at the Seattle General Hospital on March 22. An incision was made in the crease of the deltoid anteriorly, the muscle fibre split and drawn outward. A large flat sessile bursa, the size of a half dollar, was found and the outer surface of the bursa was removed. A second incision was made in the anterior fold of the axilla, so the lower surface of the joint capsule could be exposed. No tear in the capsule was found. Convalescence was uneventful. The patient was allowed to use his arm below the horizontal in one week's time.

An examination made of this man on May 7, several weeks after his discharge from the hospital, showed his shoulder to be normal. There is motion in all directions and the patient says there is a sense of security that has not been evident since his original accident.

POSTERIOR GASTROENTERIOSTOMY FOR DUODENAL ULCER

A white, male, carpenter by occupation, forty years old, was admitted to the Seattle General Hospital, May 2, 1924. His chief complaint was "indigestion."

For the past ten years he had been troubled with epigastric discomfort, consisting of a dull, gnawing sensation, "gas," and at times a heavy feeling as if there was a lump in his stomach. This discomfort would come on immediately after eating and it was not relieved by alkalis. He had vomited occasionally in the morning and had noticed that the vomitus contained particles of food eaten several days before. The symptoms had gradually increased in severity the past two months and he had lost about twenty-five pounds in weight during four months. No hematemesis or melena. He had been troubled with constipation for many years.

Past history and family history unimportant. Habits good. Physical examination showed a well developed but poorly nourished, anemic, middle-aged male. The skin and mucous membranes were slightly pale. There was a slight amount of tenderness over the epigastrium and slight spasm of the upper portion of the right rectus muscle. There were no palpable masses and the abdomen was tympanitic. The physical examination was otherwise negative. X-ray showed a marked defect and irregularity in outline of the duodenal side of the pyloric cap, and six hour retention of barium.

Operation. A small puckered ulcer on the duodenal side of the pylorus was found, with a thickened pyloric ring; retrocecal appendix with adhesions. Posterior gastroenterostomy was performed, three layer method, with short loop; appendectomy. Convalescence uneventful. Given soft diet on fifth day. Patient was up and about at end of two weeks, gaining about one-half pound daily.

THREE GENITOURINARY CASES

Alexander Hamilton Peacock, M.D.

SEATTLE, WASH.

This is a presentation of three cases. Each one has some special urologic interest.

ADENOFIBROMA OF PROSTATE WITH MULTIPLE VESICAL CALCULI

Case 1. This is fibroma of the prostate with multiple calculi of the bladder. This patient is a man of 61 years, born in Finland and now a clerk in a hardware store. He gave the usual prostatic history. For the past twelve months he has been getting up at night to void with a small, difficult stream. He has had frequency during the day. There has been no blood in the urine and no pain in the bladder.

Examination shows a slightly undernourished man of middle life with a blood pressure of 130 mm., over 50 mm. Wassermann negative. Blood chemistry: urea nitrogen 23 mg. per 100 c.c., creatinin 1.5 mg. per 100 c.c. He had turbid urine, containing pus cells and many Gram positive diplococci resembling staphylococci. There was 100 c.c. cloudy residual urine. The prostate felt like a small lemon and was hard. An x-ray was taken of the bladder and kidneys, the same which I am showing to you.

He was not cystoscoped because of the small size of the urethra. Right here I wish to point out that there is some danger in cystoscoping prostatics. They bleed very easily and are very prone to chills. A small instrument should be used with the least amount of trauma possible. I have seen a death following cystoscopy in these prostatic enlargements.

Another point in this case illustrates the necessity of always x-raying the upper urinary tract. These long standing urethral obstructions not infrequently develop calculi of the kidneys, ureters and the bladder. This patient's x-ray shows multiple angular calculi of the bladder. He submitted himself for prostatectomy on Jan. 5, 1924, and I am presenting you the specimens lifted out of the bladder. They are unusual on account of their sharp edges, several of them being isosicles.

The interesting part of this case is the lack of hemorrhage, fever, pain in the bladder and the perfect geometric formation of these stones.

IMPACTED CALCULUS OF THE BLADDER

Case 2. The second case is that of an impacted calculus of the bladder. This is a young boy, 22 years of age, who gave the history of cystitis and hematuria for the past two years. He claims that he has to pass his water every hour, that it is very painful and that at times it suddenly stops and he cannot empty his bladder. He has had no urethral discharge, no gonorrhea. He has done manual labor. His general examination is negative. He had no fever. He is very well nourished, muscular. His urine is cloudy, shows red blood corpuscles, many pus cells and many cocci resembling staphylococci. This is a point I wish to call to your attention, the extreme frequency of calculus formation in the presence of staphylococci. Wherever you find staphylococci in the urine, take extreme precaution to eliminate calculi, for they are extremely common.

On account of his very sore bladder, I first had an x-ray taken of the bladder and I am showing you the film. It shows an oval shadow, lying slightly transverse. On the 16th of January 1924 a suprapubic cystotomy was performed. A calculus was found plugging the prostatic urethra. This calculus was rough, cylindrical, with tapered ends and slightly curved. It measured 2¼ inches long and ¾ inch wide, weight 19.7 gm. A suprapubic drainage tube was put in but had to be removed the next day on account of lack of drainage.

This lad was young and extremely strong and he insisted on getting out of bed to attempt to urinate and empty his bladder. On the third day his temperature rose to 101 and pulse 120. His abdomen was very sore and somewhat rigid. The stitches were all removed, wound opened up and a large quantity of bloody fluid escaped. In the evening his temperature was still high. His leucocyte count was 28,800. The upper abdomen was hard and tense. He had hiccups, nausea and some vomiting. He was taken back to the surgery, where, under general anesthesia, the wound was opened up and enlarged. The bladder was found to be normal but the dammed up urine had spread up above the bladder and entered the pelvic peritoneum. This latter was opened well and thin, bloody fluid was found in the pelvis. This was aspirated with a sucker. A cigarette drain was placed deep in the pelvis back of the bladder, one cigarette drain extraperitoneal and another tube in the bladder. His symptoms gradually subsided and he is now convalescing very rapily.

This complication illustrates the point of bladder drainage. One must use a fenestrated tube and one that will not collapse. The rubber must be rigid and placed far enough into the bladder to give pelvic drainage. It is also a good thing to place a second rubber tube outside of the bladder in case of leakage.

HYPERNEPHROMA

Case 3. The third case is that of a tumor of the kidney. It is interesting from the point of diagnosis. This patient is a woman of 40 years, with symptoms of pain in the region of both kidneys but mostly on the right side, not severe but distressing, being more of a dragging feeling. She was examined by several doctors who could palpate the right kidney and diagnosed it nephroptosis. She has never had hematuria and only once in a while frequent urination. The urinalysis at all times has been negative. There is nothing in her history except measles and chickenpox. Never pregnant. She is a woman of normal nutrition with a soft abdomen. The right kidney is very readily palpable, it is movable and feels like a small golf ball on the lower pole of it. The lower pole of the left kidney can be palpated. There is no localized tenderness.

A renal study was made showing a normal urinalysis, normal bladder, and urea and functional time identical in both kidneys, both of them normal. The pyelograms showed a normal left pelvis but the right one, a slide of which I am showing, was very irregular, showing encroachment upon the calices and distortion. This great irregularity is more or less typical of tumors of the kidneys and has been called by some, "Brasch spider pelves." A diagnosis of tumor of the lower pole of the right kidney was made.

This patient was operated on the 21st of January 1924 and the following findings were noted:

The kidney was very slightly enlarged. Occupying the lower pole was a tumor two inches across, spherical, of soft tissue and looked like brain substance. The pelvis was small and calices distorted. The rest of the kidney tissue was perfectly normal. A diagnosis was made of hypernephroma by the pathologist.

Two things can be learned from this case. The first is that considerable information can be obtained by palpation of the kidney itself. To do this the patient must be perfectly relaxed, not afraid and the palpating hands placed as shown in the lantern slide. It takes time to make these palpations. They cannot be done hurriedly.

The second point is the great irregularity of the calices and pelves in tumors of the kidneys. They show a marked variation from the normal pelves, as the tumor grows and encroaches and pushes the pelvis to one side or makes constrictions at various points. It is by the combination of all these methods of examination that very often considerable accuracy can be employed in arriving at a diagnosis.

DOUBLE INGUINAL HERNIA IN AN INFANT

Herbert E. Coe, M.D.
SEATTLE, WASH.

Previous History. Baby boy, age 5 weeks, full term, prolonged labor. Child had several slight convulsions during first few days and mother was told that there probably had been a cerebral hemorrhage.

Present Illness. Mother states that she first noticed a bulging in the left groin about the fourth day, which gradually increased in size. Child nursed normally but did not gain well and seemed to be in pain much of the time. At about the age of four weeks mother noticed bulging in the right groin, which increased in size quite rapidly and was also painful. The discomfort could be relieved by reducing the herniae and retaining them by manual pressure but otherwise was so great as to interfere with rest and nutrition, the child having shown no gain for three weeks. Several of the usual devices for retaining herniae of infants had been tried and the child had been under pediatric supervision for one or two weeks. The mother had been informed that the child was so young and poorly nourished that surgical measures were inadvisable.

When seen at the age of five weeks physical examination revealed a rather well developed, but poorly nourished child, color only fair, fretful and restless when not actually crying; slight increase in all deep reflexes; umbilical hernia about one c. m. in diameter; large, complete, oblique inguinal hernia on each side occupying the entire inguinal canal and extending into the scrotum. external rings obliterated, internal rings easily admitted end of index finger, herniae easily reduced with characteristic feeling and with perceptible increase in size of abdomen.

The child was so comfortable when the herniae were reduced that it seemed probable that he would gain well, if the reduction could be maintained, so attempts were made for a few days to devise some suitable truss. It was impossible to maintain reduction, however, and the hernia on the right side, which was slightly larger than the other, was operated upon when the child was six weeks old. The child was nursed up to the time of operation, and nitrous oxide and oxygen was used as an anesthetic.

Operation. One inch incision over internal ring thru superficial layers and fascia of external oblique; large sac containing appendix, cecum, portion of ascending colon and of terminal ileum isolated, opened, contents returned to abdominal cavity, sac transfixed, tied off with No. 0 plain catgut and stump drawn well upward behind upper border of internal ring; internal ring closed by approximating rather large mass of cremasteric muscle fibers over it, cord not transplanted; fascia of external oblique, superficial fascia, and skin closed in layers with No. 00 plain catgut. Collodion dressing.

A long posterior splint reaching from the shoulder to the heel was applied to prevent flexion of the thigh upon the abdomen and the child was placed under a cradle with the diaper and clothing arranged after the method of a Stiles dressing to prevent contamination of the operative field by urine.

There was no postoperative vomiting and the child began regular nursing an hour and a half after returning from the operating room. Recovery was uneventful and the child was discharged on the ninth day with the wound well healed and clean, and with a recorded gain of two ounces, the first gain in over three weeks.

The hernia on the left side increased rather rapidly and was apparently painful, so it was operated upon three weeks after the first operation. During the interval the weight again became stationary and then gradually dropped to six pounds fifteen ounces, one ounce less than at the previous operation.

The operation was essentially the same as the previous one except that the sac was larger and the omentum and intestines were returned to the abdomen with difficulty, resulting in rather marked shock. The canal was repaired as before but No. 0 plain catgut was used instead of No. 00.

The child's condition was not good, and glucose solution in saline was given by mouth every half hour for two hours, at which time the child took the breast feebly. The glucose solution was continued with a steady improvement in pulse and color during the rest of the operative day. The next day the child vomited once but took all nursings ,well and from that time convalescence was uninterrupted. He was discharged on the eighth day with the wound well healed and clean, having gained four ounces.

Ten months afterwards the wounds are firm, with no evidence of weakness, and the child has gained steadily and consistently.

NEW ADVERTISEMENTS

Attention is called to the following new advertisements appearing in this issue. Lecture courses on physiotherapy are described on page 21. Announcement is made of next year's session at Jefferson Medical College (page 10). The Great Northern announces its new Oriental Limited (page 25).

NORTHWEST MEDICINE
The Journal of the State Medical Associations of Oregon, Washington, Idaho and Montana
Devoted to the interests of the Medical Profession of the Pacific Northwest

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JUNE, 1924

EDITORIAL

ETIOLOGY OF CANCER

No problem in the field of medical research has received more constant attention at the hands of investigators all over the world than that of the cause of cancer. Everyone is familiar with the frequent announcements of the solution of the problem, all of which have failed to be proven within short periods of time. A complete and convincing summary of the present status of this question is presented by Willy Meyer.* Attention is called to the fact that the cancer cell, at one time a normal tissue cell, has been transformed from the normal to the cancerous state. The same process appears among all vertebrates, including human kind of all races and climes, dogs, horses, cattle, birds and fish, herbivora, carnivora and omnivora. There is no known microbe capable of universally affecting these beings. The contest has long been waged between the supporters of the cellular theory as the cause of cancer, and searchers for a specific parasite. Neither of these theories has been proven. At the present day, however, cancer can be produced at will and its progress observed thru all stages from the normal to the cancerous cell. A new day has dawned in cancer research. By the application of coal-tar, brushed for months at regular intervals upon the ears of rabbits or the backs of mice, cancer can be produced at will. This demonstration proves that the normal tissue cell is transformed into the cancer cell by mechanical irritation.

The author summarizes the work of experimenters and observers from all parts of the world, which demonstrates the application of this theory in the etiology of cancer among human beings. There is an analogy to the production of sarcoma of the liver among rats by the ingestion of the cysticercus intestinal parasite which has a special predilection for location in the liver. In large numbers of rats cysticercus cysts have developed into true sarcomata. A parallel case is cited among fishermen on the Baltic, among whom was found an abnormal number of cases with cancer of the gallbladder. It was noted that these men ate raw fish which were infested with larvae of trematodes, of the helminths. As in the case of nematodes, which infected the liver of the above mentioned rats, these trematodes have a predilection for the gallbladder. Among these fish eaters the gallbladder and bile ducts contained worms by the thousands. The chronic inflammation resulting from their presence produced cirrhosis of the liver, followed in a certain number of cases by carcinoma.

Other instances of similar infection are associated with the parasites inhabiting rats. An island in a river in France was populated by the patricians of the community. The water of the wells was on a level with that of the river; the houses were over-run with rats. The cancer incidence in these villages ranged as high as 21 per cent of the total deaths. Among the poorer people living on higher ground the cancer instance was almost nil. In adjacent valleys, where conditions were reversed and the people of means lived on the hills, the cancer incidence was but one or two per cent, while among the working people living in the swampy lands the cancer deaths equalled the above high figure. The rat excrement carries the eggs of the helminths in large quantities which in the above mentioned instances were probably an excitive factor.

The writer states that after a half century of research science has returned to Virchow's theory that irritation is the cause of cancer, the effect of a parasite within the system being also an example of irritation. "Not parasite plus cell reaction induces tumor growth but parasite plus tissue reaction induces inflammatory hyperthrophic processes which in a certain number of cases are followed by tumor formation." No theory of the causation of tumor growth can be satisfactory which does not apply equally to innocent and malignant tumors. No sharp line can be drawn between benign and malignant tumor growth, as a theory is wrong in principle which covers only carcinoma.

The writer in a summary states that the search for the specific cancer agent appears no longer advised, since the experimental production of cancer by non-specific means seems to prove that irritation is ordinarily the starting point tending in the direction of cancer. As nearly as anything can be certain in medicine, there is no specific infection that produces cancer. In order to reduce cancer incidence sources of irritation should be sought out and abated. One such source seems to be the rat and its systematic extermination would be advisable from the point of reducing the number of cancerinciting factors. It is suggested that prophylactic anthelmintic treatment at frequent, regular intervals thru life might work a reduction of cancer incidence, as is the case with vaccination for smallpox.

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* Meyer, Willy: Some Notes on Cancer with Special Reference to the Parasitic Theory. Journ. Cancer Research. Vol. VIII, No. 1. Apr., 1924.

CHIROPRACTIC AS IS TAUGHT

That the great majority of the exponents of chiropractic are uneducated, not only in the principles of medicine but in the ordinary preparatory courses of study, is familiar to all observers. The superficial character of the teaching and the abysmal ignorance of their instructors, however, can best be realized by one who has actually drank at their fount of knowledge. Dr. Arthur Seyse offers some first-hand information along these lines in the April issue of the *New York State Journal of Medicine.* A few years ago he spent four months attempting to acquire fundamental knowledge of this particular cult at the seat of its organization and development in Davenport, Iowa. In describing his experiences he pays his compliments to B. J. Palmer, son of the founder of chiropractic, now the revered head of the sect. He states the man's education is nil; he never rose above the grades, and has never tried to learn anything since. He decries education and intentionally solicits the uneducated as material for chiropractors. He believes himself a great leader and a modern prophet, an opinion equally shared by his devoted followers.

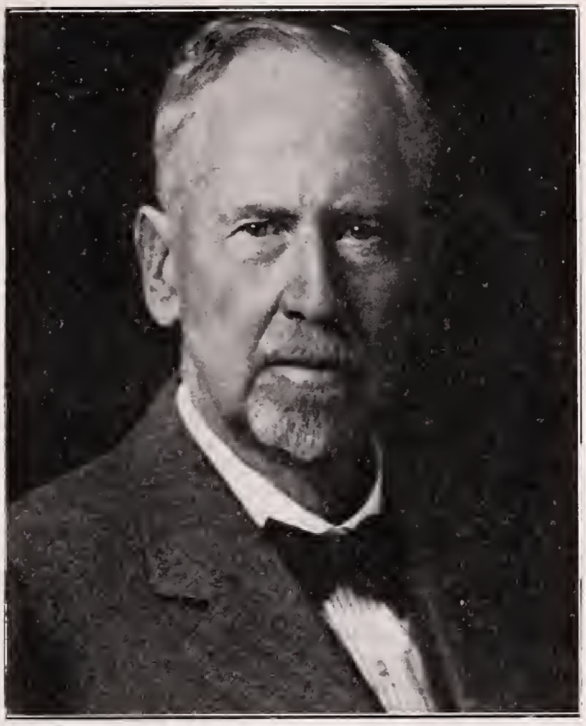
The writer states that the faculty was composed of a group of uneducated fellows, few with even a high school education. They claimed to teach chemistry, anatomy, histology and some other branches of medical lore. Anatomy was taught from a book and blackboard demonstrations. Chemistry was imparted by lectures and occasional experiment. What was claimed as laboratory work was a farce and a joke. The clinic, where adjustments were administered to expectant patients, was a sad and distressing sight. The halt, the lame and the blind, a large proportion of them chronic, hopeless cases, swarmed to the clinic with the expectation of miraculous relief. The writer states that the blind were the most pathetic of all. That hope sprang up in their hearts is not surprising, when one remembers that a promise of cure by a new course of treatment is grasped like the straw of the drowning man, after one's family doctor has assured the patient that his case is hopeless.

The doctor assigns the reason for chiropractic both to the medical profession and the public. The latter is always looking for some great specific, especially when told there is no remedy for the incurable malady. After the patient has been humbugged by the medical quack, he turns to the chiropractic with the assurance of cure and for a time feels that real benefit is being delivered to him by manual manipulation. The essayist thinks chiropractic has taken the place of the old fashioned patent medicine. The constant seeker after something new has been deprived of the solace of his patent medicine, for which he has substituted the novel chiropractic. He thinks perhaps he is no worse off with the latter than with the former, tho this decision is surely subject to question. The above mentioned dissertation on chiropractic education is full of humorous comments, mingled with detailed descriptions of the astounding deficiencies along these lines.

FOOT-AND-MOUTH DISEASE

The epizootic of foot-and-mouth disease among the cattle in California has inspired much discussion concerning this ailment and its incidence both among cattle and humans. Information regarding the disease seems to be limited among all classes of people. Physicians are frequently consulted by their patients regarding the danger of infection and the nature of its manifestations. In this connection Acting Surgeon General White, of the Public Health Service, has presented the following facts regarding the disease:

> The disease is an acute, highly contagious malady affecting chiefly cloven-hoofed animals such as cattle and sheep. Animals suffering from foot and mouth disease have fever, followed by an eruption consisting of vesicles (small blister like sores) occurring chiefly on the mucous membrane of the mouth and on the skin at the cleft of the hoof and less frequently on the udders and other portions of the skin. There is usually prolonged ill health and much wasting of the tissues.
>
> The germ which causes this disease has not been identified, but it is known that it occurs particularly in the exudate from the vesicles, in the saliva and in the milk of infected animals, tho it is not limited to these materials. It is readily destroyed by heat, such as the boiling or pasteurization of milk.
>
> Adult human beings are not very apt to contract the disease, but it is by no means rare among children.
>
> The question has been raised as to whether the disease in children known as "Impetigo contagiosa" may not be identical with foot and mouth disease in animals, but no one has as yet been able to answer this question either in the affirmative or in the negative. Foot and mouth disease is not very fatal in cattle, and apparently much less so in human beings, if at all. It does cause serious losses when cattle are infected, because of the interference with the sale of milk, the reduction of the quantity of beef produced, and also on account of the expense and inconvenience resulting from quarantines against infected districts.



DR. ALFRED COLEMAN KINNEY
Astoria, Ore.

PRESIDENT OREGON STATE MEDICAL SOCIETY
1874 AND 1924

One is rarely privileged to serve as president of any organization and repeat that service at the end of fifty years. Such is the unusual experience of Dr. Alfred Coleman Kinney, of Astoria, Ore. He was born in Yamhill County in 1850. After studying in McMinnville College, he began the study of medicine with a preceptor in 1867. He graduated from Bellevue Hospital Medical College in 1870, after two years study, which was followed by two years internship at New York City Hospital. In 1872 he began practice in Portland, having an office in the old Dekum building, First and Washington Sts. When Oregon State Medical Society was organized in 1874, he was elected its first President. After practice of a half century, he is again elected the society's President. This is an honor shared equally by Dr. Kinney and the society. May he enjoy many more years of active medical practice.

THE OREGON ANNIVERSARY

The annual meeting of the Oregon State Medical Society, held at Portland last month, made a special feature of its fiftieth anniversary. This was particularly brought out in papers by Dr. Kuykendall, of Eugene, Dr. Fulton and President Kinney, of Astoria, each of whom reviewed facts concerning the practice of medicine in their state forty and fifty years ago. This was supplemented with discussions by Drs. Josephi, Giesy, Andrew Smith and other old-timers, whose experiences antedated the recognition of the existence of bacteria and the establishment of antisepsis which marked the beginning of modern surgery. Incidents were related of those early days, many of which are now characterized by humorous aspects, altho of a serious nature when they occurred. All of the papers on the program were presented by members of the society except two by Dr. William Sharpe, of New York City, on brain injuries in adults and babies.

The attendance was representative of the profession from all parts of the state, with visitors from several cities of Washington. The social feature of the meeting was the banquet on the evening of the second day. Recognizing the supremacy of the law of the land, this was a bone-dry affair. This fact, however, did not interfere with the jollity of the occasion. The outside speaker at the banquet was Rabbi Wise, whose fund of wit and eloquence of speech presented a charm of unusual quality. Dr. Calvin White as toastmaster, with fitting introductory remarks, presented several members of the society who gave an interesting and humorous series of addresses, centered about the imaginary mental aberrations of different members of the society. The meeting was characteristic of the family medical society gatherings which are in vouge during these later years.

PUBLICATION OF CLINICAL REPORTS

In many of our cities there are societies covering a special line of practice, including a limited number of physicians. At their stated periodical meetings clinical reports are presented of much interest, some being of special value. In order that the profession at large may receive the benefit from these reports, this journal will feature from time to time a Department of Clinical Reports which will present the work of individual members of a particular society. This month such reports are published from members of the Seattle Surgical Society. In subsequent issues it is proposed to offer similar clinical reports from societies of this character in other cities in the states represented by this journal.

THE VANCOUVER MEETING

Facts concerning the meeting of the Pacific Northwest Medical Association, at Vancouver, this month, have been presented in recent issues of this journal. A large attendance from the states of the Northwest is anticipated. Visitors will be assured an enjoyable and profitable session in the leading British Columbia city.

Attention is called to the matter of reduced rates for transportation. Arrangements have been made with the railway companies, by which a rebate of one-third of the railway fare can be obtained, on condition that 100 or 150 tickets are secured. To obtain this rebate, it will be necessary for the member traveling by rail to obtain from the ticket agent, at the time of purchasing his ticket, the standard receipt certificate and to keep this. These will be taken up at the meeting and if enough can be secured the rebate will be forthcoming. It is understood, of course, that the full fare must be paid at the time. It would be well again to remind members that they must make sure of their accommodation as soon as they possibly can, as this is going to be a very difficult problem in Vancouver this summer.

The completed program for the meeting is as follows:

PROGRAM

THURSDAY, JUNE 26

8:30- 9:30 a.m.—Dr. Charles Hunter: "Two Common Types of Headache."
9:30-10:30 a.m.—Dr. Frederic J. Cotton: "Standardization of Fracture Treatment." "Handling of Hip Fractures and Results."
10:30-11:30 a.m.—Dr. Joseph Brennemann: "Throat Infections in Children."
11:30-12:30 a.m.—Dr. S. A. Kinnear Wilson: "Some Common Neurological Symptoms."
12:30- 2:00 p.m.—Recess.
2:00- 3:00 p.m.—Sir John Thomson Walker: "The Relation of Calcified Abdominal Glands to Urinary Surgery."
3:00- 4:00 p.m.—Dr. Horst Oertel: "The Flow of Structure with Age and Disease." Lantern Slides.
4:00- 5:00 p.m.—Dr. L. G. Rowntree: "Cardio-renal Vascular Disease."
5:00- 8:00 p.m.—Recess.
8:15- 9:15 p.m.—Dr. John Tait: "Hemorrhage." Illustrated by Moving Pictures.

FRIDAY, JUNE 27

9:15-10:15 p.m.—Dr. F. N. G. Starr: "The Right Iliac Fossa."
8:30 9:30 a.m.—Dr. John Tait: "The Skin, Its Functions, and Some of Its Derangements." Lantern Slides.
9:30-10:30 a.m.—Dr. L. J. Austin: "The Pathology, Diagnosis and Treatment of Gall Bladder Disease."
10:30-11:30 a.m.—Dr. L. G. Rowntree: "Liver Function Studies."
11:30-12:30 a.m.—Dr. W. W. Chipman: "The Puerperal Uterus and Its Infection."
12:30- 2:00 p.m.—Recess.
2:00- 3:00 p.m.—Dr. S. A. Kinnear Wilson: "Involuntary Movements and Their Significance."
3:00- 4:00 p.m.—Dr. Geo. S. Young: "Physical Examination of the Patient."
4:00- 5:00 p.m.—Dr. L. J. Austin: "The Indications for Operations in Head Injuries and After Results of Skull Operations."
5:00- 8:00 p.m.—Recess.
7:15- 8:15 p.m.—Dr. T. C. Routley, General Secretary C.M.A., will address members of B. C. Medical Association.
8:15- 9:15 p.m.—Prof. S. Lyle Cummins: "Tuberculosis."
9:15-10:15 p.m.—Dr. W. W. Chipman: "Ectopic Gestation."

SATURDAY, JUNE 28

8:30- 9:30 a.m.—Dr. Geo. S. Young: "Goitre and Its Medical Treatment."
9:30-10:30 a.m.—Dr. W. W. Chipman: "Adolescent Dysmenorrhoea."
10:30-11:30 a.m.—Dr. S. A. Kinnear Wilson: "A Neurological Clinic."
11:30-12:30 a.m.—Dr. F. J. Cotton: "Osteomyelitis." "Brodie's Abscess and the Chronic Infections of Bone."
12:30- 1:30 p.m.—Recess.
1:30- 2:30 p.m.—Dr. Charles Hunter: "Psychotherapy from the Standpoint of the General Practitioner."
2:30- 3:30 p.m.—Dr. L. J. Austin: "Surgery of the Hand."
3:30- 4:30 p.m.—Dr. L. G. Rowntree: "Diseases of the Pituitary and Adrenal."
4:30- 5:30 p.m.—Dr. Horst Oertel: "The Relation of the Pancreas to Diabetes."

THE WASHINGTON MEETING AT EVERETT

The Washington State Medical Association has held one previous meeting at Everett, in July, 1913. It is fitting that some of the cities of the state should be thus favored at certain intervals, in addition to the rotation of the meetings among the three larger cities. At the meeting in Spokane last fall, Everett was chosen as the meeting place for 1924 and Dr. W. F. West of that city elected President. This selection was very appropriate, as Everett now has two new large, modern and up-to-date hospitals, opened since January 1 of this year, that would be a credit to any community, helping to give the city the recognition as a medical and surgical center, to which it is entitled. It is understood that the election of Dr. West was fitting and in recognition of his continuous and efficient labors for the interest and good of the medical societies, both of county and state.

The program committee has everything well in hand and promises interesting scientific papers as well as something worth while from the East. The committee on entertainment has something unusual in store for those who are fortunate enough to be in attendance at the meeting, which will be held on Wednesday and Thursday, August 13 and 14. Reservations have been made for the entire meeting at the "Big Four Inn," on the Silliguamish river, in the heart of the "Switzerland of America." The Inn is not accessible by automobile, but is reached by the Hartford & Eastern Railroad via Hartford, a distance of about thirty miles from Everett and a delightful scenic trip. The accommodations at the Inn will compare favorably with the better hotels of our larger cities. There are individual cottages with all modern conveniences, making for comfort the stay of those who attend the convention.

MONTANA ANNUAL MEETING

The annual meeting of Montana State Medical Association will be held at Helena, July 9-10. An attractive program of scientific papers has been arranged which will be profitable for all who are present. The profession from all parts of the state are urged to attend. This is especially important in order to settle economic questions confronting them at present.

THE IDAHO PROGRAM

Below is presented the completed program for the annual meeting of Idaho State Medical Association, to be held at the Commercial Club, Boise, June 20-21 . A large attendance is anticipated. An invitation is extended to physicians of adjacent states to be present at this meeting.

PROGRAM

Morning Session, Friday, June 20, 8 A. M.
Registration. 9:00 A. M.
Call to order by President.
Report of Committee on Arrangements.
Report of Standing and Special Committees.
Annual Report of Secretary.
Address, President Fred A. Pittenger.

Afternoon Session, 2:00 o'clock
Serving the Veteran, Col. Maddox, Commanding Officer, U. S. V. H. No. 52, Boise, Ida.
Diabetic Diet, J. F. Schmershall, Jerome.
Diabetic Treatment, C H. Sprague, Pocatello.
Discussion on both papers: Ralph Folk, Boise; C. L. Gritman, Moscow.
Common Sense in Infant Feeding, P. D. McCornack, Spokane.
Discussion: W. F. Passer, Twin Falls; F. W. Almond, Boise.
Newer Knowledge of the Role of Calcium in Health and Disease (Lantern Demonstration) W. A. Price, Cleveland, Ohio.

Evening Session, 8:00 o'clock
Public Health Films, F. W. Almond, Boise.
Open to the public.

Morning Session, Saturday, June 21, 9:00 o'clock
Industrial Ophthalmology, Joseph Clothier, Pocatello. Discussion: Chas Wetherbee, Twin Falls.
Tissue Graft in the Orbit with presentation of Case, C. D. Cowles, Boise.
Discussion, R. L. Nourse, Boise.
Maxillary Sinusitis, C. W. Pond, Pocatello.
Discussion: A. C. Jones, Boise.
Adolesent Goiter. H. C. Irwin, Pocatello.
Discussion: D. L. Alexander, T.F.; G. H. Cooper, Burley.

Afternoon Session, 1:30 o'clock
Medical Problems of the Workmen's Compensation Law, L. W. Worstell, Boise.
Discussion: H. W. Stone, Boise; A. F. McClusky. Buhl.
The State Association Journal, Clarence A. Smith, Seattle.
Discussion: Open.
Dental Infections, Oral and Systemic, and the Degenerative Diseases. (Lantern Demonstration.) W. A. Price, Cleveland, Ohio.
Dscussion: Open.
Election of Officers, Closing Business, etc.

Evening Session, 8:00 o'clock
Dinner Dance at the Country Club.

UNIVERSITY MEDICAL LECTURE COURSE

If the advance sale of tickets is any criterion, the University Lecture Course this year will be more popular than ever. Three very ab'e men have been selected for this year's course:

Professor John Herbert Parsons, B.S., D.Sc., M.B., C.B.E., F.R.S., F.R.C.S., etc., London, England, surgeon to London Royal Ophthalmological Hospital and other institutions. Dr. Parsons is unquestionably the foremost physician, limiting his studies to the eye. At different times during his studies he has paid special attention to pathology, bacteriology and physiology. He will not confine himself to subjects for the specialist only, but will discuss freely his specialty in relation to general medicine and surgery. His lectures will treat the following subjects: Pupil reactions and their diagnostic significance. Ocular signs of vascular disease. Papillitis and papillae edema. Tubercle of the eye. The prevention of blindness.

Professor John Osborn Polak, B.Sc., M.Sc., M.D. Professor of obstetrics and gynecology, Long Island College Hospital. Author of numerous textbooks on obstetrics and gynecology. Dr. Polak's lectures will cover the following subjects: The pathology and types of puerperal infection which justify surgical measures. The pathology and how it explains the clinical signs and symptoms in ectopic gestation. Modern obstetric advances, including a discussion of the Potter version—prophylactic forceps; the cervical section. Dry labor, and its management. Types of fibroid tumor which produce symptoms, and are amendable to radium, x-ray or operation. The hemorrhages of the latter months of pregnancy. The management of the third stage of labor, including retained and adherent placenta.

Professor Elliott P. Joslin, M.D. Clinic Professor of Medicine, Harvard Medical School, etc. Dr. Joslin is undoubtedly America's foremost authority on diabetes. He believes in the treatment of the million diabetics by the general practitioner, and all his methods of treatment have been arranged with this in view. His lectures will deal with the following subjects: (1) Diabetes (three lectures). Etiology, prevention, causes of death, the diabetic diet, the technic of treatment, a description of the New England Deaconess Hospital clinic, the treatment of diabetes without and with insulin, the treatment of complications of diabetes with especial reference to acidosis, gangrene, surgery. (4) Gastrointestinal diseases from a therapeutic standpoint, including postoperative care. (5) Obesity: nephritis.

THE SEATTLE X-RAY MEETING

On July 21-24, the week following the University Extension course, will be held in Seattle a combined meeting of the Western Section of the A. R. R. S. and Pacific Coast X-Ray Society. The first scientific session will be held on the evening of July 21. All who have attended the University Extension lectures are particularly invited to be present at this meeting. Further scientific sessions will be held each evening at Paradise Inn, Mt. Rainier National Park, the entire day being devoted to pleasures of the mountain resort.

Any medical men who are planning a visit to the mountain this summer are invited to make their plans so that they will coincide with this meeting. This will continue from Tuesday until Thursday and, on account of being in the middle of the week, the medical profession will practically have control of Paradise Inn for that length of time. This is to be strictly a family outing, so you are invited to take the family and enjoy yourself. Further announcements will be made as to the exact place for the meeting to be held in Seattle on July 21.

MEDICAL NOTES

OREGON

Vivisection Bugaboo. Last month Dr. A. E. Rockey petitioned the Humane Society, at Portland, to turn over impounded dogs to the medical school for medical research work. Hostile aggitation was immediately raised on the part of the antivivisectionists, some of whom were very bitter in their denunciation of the heartless vivisectionists. This attitude was not materially affected by the explanation of the benefits derived from experimental work and the fact that all animals so utilized were under the influence of anesthetics. The matter was referred to a committee by the city council for investigation and future report. The disposition of impounded dogs and cats is referred to the Humane Society, which explains its connection with this discussion.

Orthopedic Clinic. Dr. W. A. MacAusland, of Boston, held an orthopedic clinic at St. Vincent's Portland, on May 5. About seventy-five surgeons from Portland and other cities of the state were in attendance. The operations were on the hip, knee and elbow joints, illustrating the principles which he has enunciated in his lectures before the profession in Portland and other Pacific Coast cities.

Reads Paper before International Conference. Dr. Ralph C. Matson, of Portland, read a paper before the International Health Conference, at Wembley, England, May 21-24, on the tuberculosis demonstration at Farmingham, Mass. The paper resulted from the invitation of Olga Nethersole, the famous actress, honorary organizer of "The People's League for Health," under whose auspices the meeting was held. The Framingham demonstration showed a reduction in the tuberculosis death rate more than twice the decrease in similar control cities, owing to the methods of examination and treatment employed.

Visits Old Home. Dr. Esther Pohl Lovejoy visited Portland for several days, while the State Medical Association was in session. She was presented by Dr. Calvin White as the "best known woman physician in America." After attending several women's and medical conventions in this country, she will sail for Great Britain to attend the London conference of the "Medical Women's International Association," of which she is president. This organization continues to do important relief work in the near East.

New Surgery for Hospital. The surgery at the Albany General Hospital has been equipped by a donation of $2,000 from Dr. J. P. Wallace. Hence it will be designated the J. P. Wallace Surgery.

Dr. H. K. Stockwell, who practiced for a number of years at Monroe, Wash., has located for practice in Salem, where he has taken the office of the late Dr. C. W. Southworth.

WASHINGTON

New Hospital to be Constructed. The city of Longview has a population of about 5,000, altho it was incorporated only a few months ago. The large lumber mill, together with several other industries, have emphasized the necessity of a hospital. During a four day campaign last month $105,000 was raised by the sale of stock for the construction of the Longview Memorial Hospital. Tentative plans for the construction of the building provide for a structure to which additions can be made. Both building and equipment will be modern in every respect.

New Hospital Opened. The new Providence Hospital, at Everett, was formally opened May 12. It is located at Pacific and Naussau Streets. It has a capacity for one hundred twenty-six patients and cost $300,000. It is a fireproof, four story building in the form of a cross, the center being of octagonal shape. The entire fourth floor is devoted to the surgery. It is modern in every respect with all up-to-date equipment.

Detention Hospital to be Opened. The detention hospital, of Tacoma, will probably be reopened under an agreement with the Pacific Rescue and Protective Society. Under the terms of the tentative agreement, the society will treat girls under twenty-one years of age suffering from venereal disease, if given use of the hospital building free of charge. The society will build a kitchen and make necessary repairs.

New Nurses' Home. The Deaconess Hospital, of Spokane, has recently purchased a commodious residence in close proximity to the hospital, to be converted into a nurses' home. It occupies a lot one hundred feet square, and has sufficient number of rooms to serve for this purpose.

Controversy over Formula for Dope Cure. Dr. R. G. Hamilton, of Seattle, some time ago devised a formula for the cure of drug addiction. A group of laymen interested in his system of treatment believe it is effective for the treatment of such cases. These supporters, being trustees of an institution bearing the doctor's name, have ousted him and propose to maintain the institution independently. He has brought a restraining action against the board and accordingly the whole matter will be aired in court.

Registration of Births. The U. S. bureau of census is about to make a test of birth registration. Dr. Paul A. Turner, director of the state department of health, calls attention to the physicians of the state to this proposed test for the determination of how efficient the laws are being complied with regarding registration. If the state is to stand well in this test, physicians and parents should at once attend to the registration of all births.

Seattle Academy of Surgery held a meeting May 23. The following officers were elected for the ensuing year: President, W. W. Earles; Vice-President, Charles McClure; Secretary-Treasurer, I. B. Greene.

Jury Verdict Set Aside. Judgement of $5,000, recently given by a jury against Dr. James Sutherland, of Spokane, for negligence in treating a broken arm, was set aside by the judge. The court stated that there was no showing of negligence on the part of the doctor.

County Health Officer Resigns. Dr. Paul L. West, who has served for some time as health officer for Okanogan county, was recently appointed city health officer for Wenatchee and health officer of Chelan county. Finding it impossible to serve two counties at the same time, the doctor last month resigned his office for Okanogan county.

Dr. H. S. Holmes, who has practiced for some time at Elk, has recently located for practice at Twisp.

Dr. J. H. Lyons, of Seattle, recently sailed from New York for Europe, where he is to make a tour of the continent.

Dr. C. A. Veasey, of Spokane, has returned from a prolonged visit to Europe and Egypt. It was a combined pleasure trip and attendance at clinics.

IDAHO

Fire in Hospital. Fire occurred at the Wardner Hospital, May 10, which threatened to destroy the building, a three story frame structure. The fire was extinguished, entailing a moderate loss. There were ten patients in the hospital at the time.

New Hospital Opened. A new emergency hospital was last month opened at Glenn Ferry, built and equipped by the O. S. L. Railway. The building has seven rooms, including a ward for patients. It is equipped with the latest hospital appliances for all medical and surgical procedures. This institution is an emergency hospital only.

MONTANA

Report on Sterilization Operations. The Eugenics Board reported last month its investigation of the eleven enforced operations performed at the Montana state hospital for the insane, at Warm Springs. While such operations are legal, they are subject to certain restrictions. It was stated that authority would probably have been obtained for nine of the operations if requested. No recommendations were made by the board.

Rocky Mountain Spotted Fever. This disease has again appeared for this season, two cases having been reported with one death. Dr. R. R. Spencer, of the U. S. Public Health Service, at Hamilton, states that he has made some discoveries in his research work which will prove of value in the final solution of this disease. It has been proven that the woodtick is responsible not only for the transmission of this disease, but probably for tuleremia and tick paralysis.

New Orthopedic Hospital Offered. Officers of the Montana Shrine temples have reported that the authorities of the order will probably offer the establishment of an orthopedic hospital in the Rocky Mountain district, for the treatment of crippled children. As this territory is so extensive, it may be that more than one hospital will be established for this purpose. It is stated that the matter probably will be definitely settled at the meeting in Kansas City in June.

OBITUARIES

Dr. William A. Shannon, of Seattle, Wash., died May 6, of septic endocarditis after an illness of five days. He was sixty-six years of age, born in Marmosa, Ontario, of Irish ancestry. After studying in the public schools he graduated from the Collegiate Institute and Toronto University. He taught school at St. Patrick's Separate School and at the Ontario Institute for the Education of the Blind. He obtained his medical degree at Trinity Medical College, at Toronto. He settled for practice in Seattle in 1889. He served as surgeon general of the National Guard with the rank of Colonel from 1898 to 1905. He was a member of the Seattle school board in 1906. He served a term as one of the regents of the University of Washington. He was one of the best known physicians in Seattle, both among the medical profession and the general public. He possessed a genial disposition and his spirit of helpfulness under all circumstances made him a valuable citizen, whose loss is universally felt.

Dr. Louis Dechmann died at Des Moines, Wash., April 30, after an illness of a few days. He was born in Germany in 1863, where he received his medical education. He came to this country some time in the late eighties. He was known as a biologist and physiologic chemist. He wrote a number of books on reconstructive methods of healing, and others dealing with the chemistry of food. Ten years ago he established a sanatorium at Lake Crescent, where he applied his health theories.

Dr. J. J. Fisher, Portland, Ore., died May 17. He was born in Linn County, Missouri, in 1841, moving to Indiana when a child. He served thru the Civil War as volunteer from that state. He graduated from Rush Medical College in 1869. He came to Oregon in 1880 and settled in Linn County. In 1853 he located in the city of Albina, now a part of Portland. He was the first physician and owner of the first drug store in that section. He was a member of the Oregon legislature in 1888 and also served as a member of the city council.

Dr. F. A. Long, of Great Falls, Mont., died May 16 of disease of the heart while in sleep. He was fifty-one years of age. He was a graduate of the University of Kansas. He settled at Eureka in 1912, after having practiced for several years at Choteau and Valier. He was one of the best known physicians in that part of Montana, having served as state senator 1919-1923. He took an active part in the public life of the community.

Dr. George W. Farmer, resident physician of the Custodial school at Medical Lake, Wn., died suddenly May 24, death being due to appoplexy. He was sixty-five years of age. He moved West in 1890, locating near Colfax. He also practiced at Chewelah, Newport, Spokane and Greenacres. For a number of years he was connected with the state insane institutions at Steilacoom and Medical Lake. For the past three years he has been physician to the Custodial school.

REPORTS OF SOCIETY MEETINGS

OREGON

CENTRAL OREGON MEDICAL SOCIETY

Pres., J. C. Vanderwert; Secty., R. W. Hendershott

Central Oregon Medical Society held a meeting at Bend, May 18. Beside the physicians of the society there were nine out-of-town visitors.

Dr. E. B. McDaniel, president of the state medical association, gave an address on "Cooperation of the County and State Medical Societies."

Dr. Eugene Rockey read a paper on "Periarterial Sympathectomy."

Dr. U. C. Coe, of Portland, gave an address on the work of the "State Board of Medical Examiners."

Dr. W. T. Brandon discussed the relation of doctors and dentists.

Dr. J. H. Besson, of Bend, was elected delegate to the State Medical Society, and Dr. J. Hosch, of Redmond, was elected alternate. A resolution was adopted in favor of the use of butter as conducive to health and condemning the use of substitutes.

Grants Pass was chosen for the next annual meeting.

MID-COLUMBIA MEDICAL SOCIETY

Pres., W. N. Morse; Secty., V. L. Hamilton

The Mid-Columbia Medical Society held a meeting at The Dalles, May 14. President W. N. Morse, presided. There was an attendance of a large number of the members of the society.

Dr. Verne Hamilton, of Portland, read a paper on Eclampsia, which was discussed by Dr. O. D. Doane.

Dr. W. H. Howard read a paper on "Diagnosis and Treatment of Diseases of the Kidney." It was illustrated by X-Ray pictures.

Dr. C. A. Veasey, of Spokane, returned home last month after a visit to Europe, where he attended clinics in Vienna, Paris and London.

Dr. Charles S. Kalb died at Aberdeen, Wash., May 17, from Bright's disease. He was fifty-seven years of age. He obtained his medical education at George Washington University, Washington, D. C. Immediately after graduation, thirty-two years ago, he located in Spokane, where he practiced until a year ago. At that time, being in poor health, he moved to Aberdeen. He was one of the prominent physicians of Spokane. He served as a member of the state board of health and of the school board. He served one year as president of the state medical association.

POLK-YAMHILL-MARION MEDICAL SOCIETY

Pres., J. C. Bellinger; Secty., D. R. Ross.

A meeting of Polk-Yamhill-Marion Medical Society was held at Salem, Ore., May 20 at the Gray-Belle hotel, the meeting being preceded by a dinner.

PROGRAM

"The Recent Conception of Liver Physiology," by Dr. E. E. Fisher, Salem. Discussion was opened by Dr. H. J. Clements, Salem.

"A Preliminary Report of the Use of Gentian Violet in Diphtheria Carriers," by Dr. J. Shelley Saurman, Salem.

SOUTHERN ORGEON MEDICAL SOCIETY

Pres., C. B. Wade; Secty., W. W. P. Holt

Southern Oregon Medical Society held its annual meeting at Roseburg, May 13. Dr. C. B. Wade, president, presiding. Thirty physicians were in attendance Several were present from Portland, including Dr. E. B. McDaniel, President State Medical Society, and Dr. F. G. Stricker, Secretary State Board of Health. The following program was presented:

Called to order by president.
Roll call and reading of minutes.
President's address, Dr. C. B. Wade, Roseburg.
"Some points on Diagnosis and Management of Pulmonary Tuberculosis," (lantern slides.) Dr. G. C. Bellinger, Supt. State Tuberculosis Hospital.
Discussion, opened by Dr. R. E. Green, Medford.
"What Shall We Feed the Baby?" Dr. C. Ulysses Moore, Portland.
Discussion, opened by Dr. B. R. Shoemaker, Roseburg.

2:00 P. M.

"Periarterial Sympathectomy," Dr. E. W. Rockey, Portland.
Discussion, opened by Dr. R. J. Conroy, Medford.
Paper on Diseases of the Skin (subject to be announced) Dr. Lyle B. Kingery, Portland.
Discussion, opened by Dr. Geo. E. Houck, Roseburg.
"Insulin in Surgery," with case reports. Dr. Ira B. Bartle, North Bend.
"Rabies in Southern Oregon," Dr. F. G. Stricker, secretary State Board of Health.
Miscellaneous business.
Admissian of new members.
Selection of place for 34th meeting.
Election of officers.
Adjournment.

WASHINGTON

KING COUNTY MEDICAL SOCIETY

Pres., F. T. Maxson; Sec., C. E. Watts.

The surgical section of King County Medical Society held a meeting at the University of Washington, Seattle, April 28, Dr. A. O. Lee presiding.

Dr. W. R. MacAusland, of Boston, gave an address on "Ankylosis and Its Treatment by Arthroplasty" with lantern slides.

The study of arthroplasty illustrates the solvent principle that is applicable to all bone lesions. The disability is measured by the amount of useful function denied the part. A deformity may be in a good useful position. Stiff joints may approach normal function, as for instance the shoulder joint. A functional and an anatomic position is the important position to follow in all joint injuries. (a) Example of this is in the shoulder, which should always be treated in the position of about 45 degrees abduction and 10 to 15 degrees forward flexion. (b) Elbow injuries should be treated in acute flexion with the exception of fractures of the olecranon process. This joint lends itself particularly to arthroplastic work. (c) Wrist injuries should be so treated to avoid flexion deformity. Arthritides of this joint should be placed in hyperextension, as this is the position of strength and best function. The wrist joint is not open to arthroplastic measures. (d) Hip joint fractures are to be treated so as to avoid adduction and flexion. This joint is open to arthroplastic work. (e) Knee joint injuries should avoid flexion and subluxation. This joint is open to arthroplasty. (f) Ankle joint is to be kept at right angle and is not open to arthroplasty.

The history of arthroplasty dates back to 1824 and began with the placing of foreign particles as rubber, wood, steel, etc., between the joint surfaces. All of these suppurated with ultimate stiffness. Later pedunculated flaps of fat and fascia were used but these were unsatisfactory because of the necrosis of tissue and flail-joints. Some of these operations were mere excisions, which should only be done to produce immobilization. Excision produces arthritic changes in the bone, as no joint will stand misuse.

All weight-bearing joints need stability, and unless this is gotten the life as to function is lost. A stabile elbow or knee is very important. The present method is to use free fascia removed from the thigh and placed between the joint surfaces which have been moulded to fit.

A very interesting and instructive lantern slide demonstration was given, showing the various stages of the operation in arthroplastics of the elbow and knee. Dr. MacAusland then showed views of the end results produced, one to ten years following operation.

PIERCE COUNTY MEDICAL SOCIETY

Pres., S. M. MacLean; Sect'y, W. B. Penney

The regular meeting of the Pierce County Medical Society was held in its rooms, at Tacoma, April 22. Dr. MacLean in the chair.

Minutes of the three previous meetings read and approved.

Dr. Fishel presented an x-ray plate showing an unusual shadow of renal calculus.

PROGRAM

"Exophthalmic Goiter with Special Reference to Iodine Treatment," Dr. B. T. King, Seattle. This paper demonstrated the value of iodine treatment in the exophthalmic type. It will cut down necessary ligations in operative cases 80 per cent. Iodine should be given before and after the operation. In discussion Dr. J. B. McNerthney called attention to the danger of iodine in toxic adenoma. Dr. J. R. Brown stated he did not believe iodine did much harm in toxic goiters, but large doses were dangerous in cases of adenoma.

"Chronic Colitis," Dr. C. E. Hagyard, Seattle. This paper gave the points on which a diagnosis of chronic colitis could be made. He stressed the necessity of a thoro physical examination of all cases presenting abdominal symptoms. Discussion by Drs. R. A. Morse, J. R. Turner, J. R. Brown and C. Quevli.

A communication was read from Fred J. Dibble, Director of Licenses, in regard to license held by Dr. Elmer E. Williams, who is now serving a sentence in the penitentiary, asking the directors of Pierce County Medical Society to make complaint for revocation of his license.

A communication was read, inviting members of the Pierce County Medical Society to the annual meeting of the Antituberculosis League of Pierce County, to be held Saturday, April 26, at Tacoma Hotel.

Dr. MacLean requested all members of the association to read Collier's Magazine for April 19, 1924, the article in question being "Rid the Country of Quacks." Announcement was made that the Board of Trustees requested each member of the society to subscribe for Collier's as an appreciation of the articles which they have published in regard to quackery.

SNOHOMISH COUNTY MEDICAL SOCIETY

Pres., C. L. Hoeffler; Secty., J. F. Beatty

Snohomish County Medical Society held a meeting at Arlington, May 6. About twenty-five physicians were in attendance from Everett and other towns of the county.

Dr. J. R. Persons, of Seattle, read a paper on "Loss and Gain in Weight of New-born Infants." There was a discussion of cases by the doctors present. Dinner was served to the visiting physicians.

SPOKANE COUNTY MEDICAL SOCIETY

Pres., C. E. Butts; Sect'y, G. H. Anderson

The regular clinical meeting of the Spokane County Medical Society was held April 24, 1924, at Edgecliff Sanatorium, Spokane. The minutes of the previous meeting were read and approved.

Dr. Frank S. Miller had charge of the program. He discussed the classifications of tuberculosis from the standpoint of prognosis, demonstrating cases and showing the radiographs to represent the different types of cases. He gave the following classifications: (1) Cases with good prognosis; (2) cases with bad prognosis; (3) cases with good immediate prognosis but poor prognosis for the future. Further he gave a discussion of circular shadows as seen in radiographs of the chest.

Dr. Gray gave a talk on concentration examination of the sputum, giving the technic of the modification of Pottenger's method.

Dr. F. K. Herpel was unanimously elected to membership. Dr. Eugene Gay was elected to membership with one dissenting vote.

The regular monthly clinical meeting of the Spokane County Medical Society was held at St. Luke's Hospital, Spokane, Wash., May 22. The minutes of the previous meeting were read and approved.

Dr. S. E. Lambert reported a case of pregnancy complicated by pernicious anemia.

Dr. Carl May reported a case of malaria, demonstrating the plasmodia in smears of the blood.

Dr. G. H. Green gave a case report on cancer of the prostate with metastases to bone and showed autopsy specimens.

Dr. J. B. Stone was unanimously elected to membership in the society.

Announcement was made by the president of the discontinuance of the meetings during the summer months.

STEVENS COUNTY MEDICAL SOCIETY

Pres., R. F. Goetter; Sect'y, J. W. Henderson

Stevens County Medical Society held a meeting at Colville, Wash., May 7. Some changes were made in the fee bill.

The folowing officers were elected for the ensuing year: President, Dr. R. S. Wells; Vice President, Dr. W. A. Cartwright; Secretary-Treasurer, Dr. W. A. Olds; Board of Censors, Drs. C. F. Craig, R. F. Goetter and J. W. Henderson.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

Pres., J. T. Dowling; Secty., M. J. Morris

A meeting of Puget Sound Academy of Ophthalmology and Oto-Laryngology was held at Virginia Mason Hospital, Seattle, Wash., May 20, Dr. J. T. Dowling, President, presiding. Twenty-nine members and seven visitors were present.

Dr. L. Klemptner reported two clinical cases: (1) Persistent thyroglossal duct. (2) Woman, upon whom he had recently operated for tumor of the right lacrymal gland. The tumor is nodular, firm, about 2x1x½ cm. in diameter. Microscopic examination not yet made.

"Mastoid Complications." Dr. A. T. Wanamaker. He first emphasized the importance of a careful study of each mastoid case by (a) general physical and laboratory examinations, (b) x-ray examination, (c) on operative chart should be the manner of incision, condition of the cells, etc.

Among early complications are those referable to the circulatory system, as blood infection without sinus thrombosis. There may be meningitis, localized pachymeningitis, serous, purulent leptomeningitis; brain abscess, labyrinthitis, facial paralysis and neuritis. Infection of lymph stream may give parotitis. Postpharyngeal abscess may result from lymphatic infection around eustachian tube.

Case histories were presented of five patients with complications of mastoiditis. The first was a boy with parasinus abscess, who cleared up after operation. The second was a woman with double mastoid, hemorrhagic nephritis, with nonhemolytic streptococcus in blood and urine. A transfusion of one pint of blood by indirect method was given, followed by a gradual clearing up of symptoms. The third was a girl of eight years with a double mastoid, treated for one week by chiropractor, who had meningitis with streptococcus in spinal fluid with positive Koenig paralysis of left external rectus. Operation, transfusion of blood, recovery. Fourth was postpharyngeal abscess following operation. It opened itself and rigidity of neck ceased. Fifth was case of brain abscess, following chronic ear and headache, Wassermann positive. Recovery complete, after operation.

Dr. Edward Jackson, of Denver, guest of the Acadedy, talked on education in eye, ear, nose, and throat work.

IDAHO

IDAHO FALLS MEDICAL SOCIETY

Pres., A. R. Soderquist; Secty., J. W. West

The Idaho Falls Medical Society held a meeting at Idaho Falls, May 3.

The following officers were elected for the ensuing year: President, Dr. E. A. Cantonwine; Vice-President, Dr. H. L. Willson; Secretary-Treasurer, Dr. J. W. West; Delegates to the meeting of the state medical association, Drs. A. R. Soderquist and H. D. Spencer.

Dr. Hatch will give a report on clinical work in the East at the next regular meeting in June.

PUBLIC HEALTH LEAGUES

WASHINGTON

VIVISECTION PUBLICITY OBTAINED

In view of the activity of the Washington Antivivisection Society, of which Senator Clarence Dill and Congressman Johnson are officers, the Public Health League of Washington has been giving some attention to this issue in its publicity campaign. It is possible that this organization will campaign in Washington this year, tho reports received indicate that Colorado and California have been selected as the main battlegrounds for 1924. One article was recently released to the press by the League, entitled "Human Life Comes First," which has been well and favorably received.

In a communication to the League office, the national organization, Friends of Medical Progress, has the following to say in reference to this publicity effort: "Thank you for sending us copies of 'Human Life Comes First,' which you say has appeared in fifty Washington newspapers. It is an excellent article and calculated, I feel sure, to do a great deal of good. We only wish that other states had the press so solidly behind them as you seem to have."

PIONEER WRITES LEAGUE ABOUT GOITER

That the League campaign against goiter has attracted considerable attention and is the basis for much consideration is evidenced partially by the great number of letters of inquiry which have come into the office. Not only have nurses and others interested in public health measures asked for literature and offered comment, but others, not directly interested in this issue, have presented some interesting data covering goiter and the reason for its high incidence in Washington state.

A communication from W. P. Bonney, secretary of the Washington State Historical Society, is of interest, in that it discusses the question as to the alleged prevalence of goiter among the old pioneers of the state. Mr. Bonney, who has identified himself with the League as an associate member, writes: "Many years experience in the drug business made me somewhat familiar with the prevalent ailments of the people of Washington. Of late I have noticed in the public press, collated from medical conventions, etc., reports of goiter being prevalent among pioneers. I am the son of a pioneer family, married a pioneer daughter, have numerous connections on both sides and do not know of a single case of goiter among the whole clan; moreover, in my present line of work I attend pioneer meetings and seldom see what we term real pioneers afflicted with goiter. However, I am aware that many residents now living in Washington do suffer from goiter.

"In conversation with a prominent chemist regarding this matter last week, he suggested that possibly the fact that real pioneers used much sea food, fish, clams, etc., in the early days, enabled their systems to receive the required amount of iodine, thus preventing goiter.

URGE PHYSICIANS AND PHARMACISTS TO COOPERATE

The following paragraphs occur in a recent bulletin of the Washington State Pharmaceutical Association. They are interesting as showing the attitude of the pharmacists of the state toward the medical practitioner, and the evident desire of the officers of the organization to seek more educational contact with the public.

"There is need for publicity of the right kind in the medical as well as in the pharmaceutical profession. Both have suffered from unfair criticism, as well as unjust legislation. We have all been too much like the ostrich with his head in the sand. We have good professions, but have been too busy with our work, or else too ethical, to tell the public about them. There is no need for all of this mystery in connection with medicine. This attitude of mystery and secrecy is responsible for most of the fakes and many of the 'pathies' and 'isms' that have made such inroads on our profession. The fakirs have prospered while we have silently plodded.

"The relations between the doctor and druggist should be more intimate and more tolerant. Both have their troubles, and each should make an effort to protect the other from unjust criticism. When an individual in either profession is discredited, it is a reflection on the entire field of medicine. The druggist should never attempt to suggest to a friend the fee that the doctor should charge; likewise, the physician should not assume to know the cost of a prescription. Neither is in a position to estimate the fees of the other. The druggist is not qualified to prescribe, nor is the doctor competent to dispense. The training and qualifications of each has prepared them to assume different obligations, and for that reason they should respect the responsibilities of each other."

OREGON

The Oregon Public Health League, thru Dr. Sommer, President of the Executive Committee, has started a promotion campaign toward the general sterilization of milk used in the city of Portland. A great many dairies, especially of the smaller type, are still furnishing their patrons with raw milk, and a few, mostly the larger dairies, are furnishing a high grade pasteurized milk.

From the best information the Oregon Public Health League is able to obtain. it appears that pasteurized milk is being more generally used as time goes on. Much interest is being taken in the matter by Portland physicians who are advising the public against the use of raw milk. Thru their efforts we believe that in a short time the use of pasteurized milk will become general in the city of Portland.

It has been set forth by some that pasteurization destroys certain food values in milk, but there has been nothing to show that this loss could not be taken care of thru the use of other food materials. The City Health Department, under Dr. George Parrish and the Oregon State Board of Health thru its Secretary, Dr. Frederick D. Stricker, are furnishing the people of Portland with much valuable information on this very important subject.

HOSPITAL STANDARDIZATION

MEDICAL STANDARDIZATION OF HOSPITALS

The standardization program of the American College of Surgeons has been a most excellent one; in fact, has highly standardized our hospitals from a surgical standpoint but has neglected a study of the situation from the internist's standpoint. At a recent meeting of a state committee, at which standardization matters were being discussed, the representative of one of the hospitals reported that his hospital had classified its surgeons into three groups: major surgeons, senior group; major surgeons, junior group; and minor surgeons, and had categorically classed all other men as practicing general medicine. This seems to be the outstanding example of understandardization, leading to the neglect or actual detriment of general medicine.

The clinical management of a patient suffering from a chronic nephritis with renal insufficiency and cardiac decompensation, or a patient suffering from ulcer of the stomach who is to be treated medically; a pernicious anemia; a general asthenic or psychasthenic patient or a diabetic takes place in importance, difficulty and accuracy of technic with gastroenterostomy, cholecystectomy or brain surgery. To study a group of men from the standpoint of their ability as surgeons, perhaps as surgeons with diagnostic ability but often from a standpoint of mechanical ability alone, and permit the culls from this group to treat any form of medical case that comes along without supervision, without classification or without consideration of their particular abilities or inabilites to treat difficult cases, appears as a gross injustice, not only to the hospital and patient but to the profession itself.

It is high time that our standardization program now include various other matters. We should standardize our hospitals from the standpoint of the medical care patients are receiving. Inquiries should be made in every hospital, first, as to the manner in which the diagnoses of medical cases are being worked up, whether laboratory examination are being made sufficiently often, whether their interpretations are being given the proper place in our diagnostic armamentarium, and whether the application of these measures shows a thoro knowledge of medicine or not. Second, our laboratories should be studied to ascertain whether they are doing accurate work. Often this work is in the hands of technicians who are not being given sufficient supervision; often the reports rendered would not be acceptable if the physician knew the facts. Third, a study should be made of the therapeutic measures that are being carried out, whether they are technically correct; whether they are applied in good practice. While it may not often be the case, the catastrophies of medicine can be just as tragic as of surgery. Medical catastrophies can and should be minimized as have those of surgery.

If the the practice continues that now prevails of carefully studying the work of men who do surgery and paying no attention to those who do medicine, our hospitals will not be good places to take medical patients. The laboratories will fall behind, therapeutics will became a lost art, and it is safe to predict that tragic occurences will occur that will direct the attention of those who are interested in standardization toward this work, if this letter does not do so.

This leads to a few other observations in connection with hospital standardization, some bearing upon the question of understandardization from a medical standpoint and some of them not. Many phases of standardization are a mere sham, put on to get a rating by a set of inspectors who investigate surgical matters reasonably carefully and neglect entirely to look into medical and laboratory matters. Much of our seeming improvement is comparable to the knowledge of a man who is preparing himself for examination by cramming. An investigation of records will show that many of them are made to fill space on a printed history sheet rather than to give a word picture of tht disease the patient is suffering from. This is perhaps even more noticeable among surgeons than among medical men; certainly many histories are still far from being what they should be. A large percentage of the charts would not give an inkling of the disease from which the patient is suffering. ,

It is often noted in the monthly analyses of cases that the reports of deaths do not conform to the requirements of the nomenclature adopted by the Bureau of Vital Statistics. Therefore, our records do not make statistics that are of any practical value. A standardized hospital ought to be several jumps ahead of this bureau in the accuracy of its diagnosis and particularly in those given as a cause of death.

Another state of affairs that is a sham is that of fee-splitting. None of the hospitals of our acquaintance is doing anything to actively combat this practice. The prevalence of fee-splitting has been lessened but little. It has been modified, perhaps, in being less flagrant but more cunning, since hospital standardization has been inaugurated. It is regretable that the hospitals have asked physicians to sign pledges not to divide fees and then file the cards away and promptly forget all about them. This evil should be attacked in an aggressive manner.

A few of the most glaring faults of hospital standardization have been pointed out as it stands at present, and it is hoped that some active influence may be gotten back of some of the deficiencies mentioned. Every hospital can do this for itself but apparently every one is waiting for something or someone to take hold. Great progress has been made, but there is room for just as much and more.

—F. E.

HOSPITAL PRIZE ESSAYS

Preliminary announcement of a prize essay competition on the vitally important subject, "The Interrelationships of Hospital and Community," is made by The Modern Hospital Publishing Co., Inc., in the June issues of The Modern Hospital and The Nation's Health. Three cash prizes of $350, $150 and $100 will be awarded, and there will be such honorable mentions as may be authorized by the Committee of Awards.

The purpose of this competition is to concentrate the thought of hospital, public health, medical and social welfare workers on this timely subject for the purpose of crystallizing opinions and defining future opjectives. The general program for the competition may be obtained on and after June first from The Modern Hospital Publishing Co., Inc., 22 East Ontario Street, Chicago.

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Differential Diagnosis. Presented thru an Analysis of 317 cases. By Richard C. Cabot, M.D. Professor of Medicine and Professor of Social Ethics at Harvard University. Volume 2—Third Edition, Revised. Octavo of 709 pages, 254 illustrations. Philadelphia and London. W. B. Saunders Company, 1924. Cloth, $9.00 net.

In this edition there is great amplification of the chapter on abdominal and other tumors. No cases are apt to give the diagnostician more trouble than some abdominal tumors. This reminds one of William Mayo's classical remark that the only reason why so-and-so made a mistake in some abdominal case was due to the presence of the abdominal wall. "If the abdominal wall had not been there he would have had no trouble in diagnosis."

Cabot says, "the diagnosis in mosts cases of abdominal tumor is either easy or impossible." One thing that is easy is to ask a surgeon to draw aside the mystery of the abdominal wall but this is of course inadvisable, if one only could be sure that the disease were inoperable, as in tumors of the pancreas and liver. But it has been a rule with the reviewer that in cases of chronic jaundice with tumor exploration should be done because tumor with jaundice, simulating malignancy of the liver, gallbladder or pancreas, may turn out to be due to stone in the common duct. Another rule that seems good to the writer is to treat all cases of suspected carcinoma of the liver for syphilis. Some will disappear. The discussion on the diagnosis of abdominal tumors by Cabot is three times as long as in the first edition and three times more valuable, full of characteristically pithy remarks, as, "With any abdominal tumor in a woman, remember the possibility of pregnancy," and "assume any suprapubic mass to be a full bladder until it is proved to the contrary." The cases remain unchanged in this volume but the introductory discussions have been considerably modified and enlarged.

Cabot has probably done more than any other living man in this country to improve our methods of study and diagnosis by his clinical teaching to students and graduates, by his classical contributions to medical literature, and by his books on physical diagnosis and differential diagnosis. His work is primarily based on comparison of diagnosis by experts and the results of autopsies on the same patients. Logical reasoning founded on such evidence is incontravertible. By this method he showed long ago the fallacy of meticulous urinary examinations, boldly announcing that color, amount and specific gravity were of vast importance. Again, he has completely changed our ideas concerning the significance of mitral regurgitation, showing that mitral disease means mitral stenosis and that patients do not die of regurgitation alone.

No works are of more value to every member of the medical profession than these two volumes of Cabot on differential diagnosis, and they are also of absorbing interest, and should be read and reread at suitable intervals. They should be in every physician's library and are as essential as a medical dictionary.

Winslow.

Modern Urology. In Original contributions by American Authors. Edited by Hugh Cabot, M.D., C.H.G., F.A.C.S., Dean and Professor of Surgery in the Medical School of the University of Michigan. Vol. I. General Considerations. Diseases of Penis and Urethra. Diseases of Scrotum and Testicle. Diseases of Prostate and Seminal Vesicles. Second Edition. Illustrated with 398 Engravings and 11 Plates. 828 pp. Vol. II. Diseases of the Bladder. Diseases of the Ureter. Diseases of the Kidney. Illustrated with 288 Engravings and 8 Plates. 744 pp. $18.00 for two volumes. Lea & Fibiger. Philadelphia and New York. 1924.

This second edition contains many changes, bringing the work right up to date, making it a classic and complete in every detail. These manuscripts have been written by twenty-eight of the most prominent urologists of the country. Each chapter is the masterpiece of its author. The text is remarkably clear and well illustrated.

The diseases of the female urethra have been given due consideration. The section dealing with the ureters gives us some very interesting information, and in speaking of uretral strictures the author states that it is one of the most common lesions within the abdomen, it having been found by him in some 2000 cases in the past eight years. He also pointed out that these lesions may cause many and varied symptoms. The urinalysis was absolutely normal in 30 per cent of his cases.

On the whole, this production stands out by itself for completeness and should appeal not only to every urologist but to every practitioner who wishes to become more efficient in diagnosis, especially in lesions of the lower abdomen. In the opinion of the reviewer this is the best work on urology in the English language.

NELSON.

Local Anesthesia. Its Scientific Basis and Practical Use. By Prof. Dr. Heinrich Braun. Obermedizinalrat and Director of the Kgl. Hospital at Zwickau, Germany. Translated and Edited by Malcolm L. Harris, M.D., Professor of Surgery. Chicago Polyclinic, etc. Second American from the Sixth Revised German Edition. With 231 Illustrations in Black and Colors. 411 pp. $5.00. Lea & Fibiger. Philadelphia and New York. 1924.

There is no more exhaustive nor better work on local anesthesia than this. It has remained the standard work in this field since its first appearance in 1905. How unsurpassed it is can be judged by the fact that chapter after chapter is literally rewritten in other books on this subject. It is just as thoro when describing such a simple process as how to drop cocaine in the eye or swab the nose and throat with cocaine, as when explaining the methods of local anesthesia of larger and deeper fields thru nerve blocking. Anatomic landmarks are minutely given, profusely illustrated by diagrams, pictures and case records. In each case the anesthetic and the amount to be used are mentioned, so that one is able without difficulty to repeat the author's methods.

No matter how great an enthusiast for local anesthesia he may be. even if there is at present a decided tendency toward the use of local in preference to gneral anesthesia, the author always knows when local anesthesia should not be the method of choice. For instance, in many abdominal operations he uses mixed anesthesia or general anesthesia only; in hernia local anesthesia is his method of choice, but in gynecologic laparatomies he practically rejects local anesthesia.

KLEMPTNER.

Abt's Pediatrics. By 150 specialists. Edited by Isaac A. Abt., M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes, total ing 8,000 pages with 1500 illustrations, and separate index volume free. Now ready—Volume III containing 1051 pages with 223 illustrations. Philadelphia and London. W. B. Saunders Company. 1924. Cloth $10.00 per volume. Sold by subscription.

This third volume presents the physiology, clinical medicine and surgery of the gastrointestinal tract and of the respiratory system. The contained material is varied in scope and is presented with detail possible only because each chapter is written from the point of view of a specialist in the subject matter. Pediatrist, surgeon, physiologist, orthodontist, otolaryngologist, each contributes in his special field as applied to children. The result is a volume of information relative to the child such as heretofore has not been readily available.

Von Pirqet presents the new system of nutrition. Orthodontia is fittingly stressed in an elaborate and beautifully illustrated chapter by de Vries. Abt presents the chapter on nutritional disturbances in infancy and Marriott a most satisfactory chapter on coeliac disease. Richter has written a very full, and clinically most valuable, chapter on the surgery of the gastrointestinal tract in children. His discussion of congenital hypertrophic stenosis is particularly authoritive. The latter part of the book covers the physiology of respiration, medical and surgical conditions of the nose and larynx. and respiratory diseases.

MOHR.

The Relative Position of Rest of the Eyes and the Prolonged Occlusion Test. By F. W. Marlow, M.D., M.R.C.S., F.A.C.S., Professor of Ophthalmology, College of Medicine, Syracuse University. Cloth, 96 pp., Illustrated, $2.50. F. A. Davis Co. Philadelphia. 1924.

The author contends that the ordinary muscle tests are misleading and, unless the patient has had one eye occluded for a week, the real amount and kind of heterophoria cannot be determined. He likens the test to the use of cycloplegia in estimating errors of refraction. His findings are based on a study of 700 cases of suspected muscle imbalance, of which 154 were found to be orthophoric by the usual tests and only 13 remained so after prolonged occlusion. There are many charts showing the various groupings and the findings before and after occlusion but being selected cases no conclusions can be drawn as to the prevalence of imbalance in all eyes nor to what extent asthenopia may be attributed to this defect.

The use of prisms or other means for exercising the weak muscles is condemned as of no value and constant wearing of prisms based on the findings after prolonged occlusion is recommended as the remedy par excellence. He does not state how many of the cases in this series received prisms for constant wear nor what benefit was received by those so treated. His clinching argument is that the therapeutic test proves his theories correct for, to quote his words, "the proof of the pudding is in the eating." Except for several case reports he offers no evidence in support of this. It would seem, since he considers the therapeutic test to be proof of his contentions, he has not proven his point until he has presented the results of treatment. The present status of the treatment of muscle imbalance is so

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unsatisfactory that the promise of anything new deserves consideration and this monograph is worth reading, if only for the chance of starting an argument.

Brugman.

Text Book of Psychiatry. By Eugen Bleuler, M.D., Director of the Psychiatric Clinic, Zurich. Authorized English Edition by A. A. Brill, Ph.B., M.D., Lecturer on Psychoanalysis and Abnormal Psychology, New York University. 635 pp. $6.00. The Macmillan Co. New York, 1924.

For twenty-five years the author has labored in this field and this book is a worthy result of his experiences. His training as a teacher has lead him to condense and systematize his material to good advantage. His classification of mental diseases closely follows that of Kraeplin but Bleuler goes more deeply into the symptomatology and explains the reaction of each particular type on a psychologic basis. While he recognizes the value of Freud's contribution to psychology his own opinion on the subject is very conservative. This book is one long needed by the psychiatrist. It modernizes and at the same time forms a connecting link between the old and the new psychopathology. The translator has done a good piece of work and deserves credit for giving the English speaking profession such a valuable contribution.

Wilt.

Mental Disorders. By Francis Barnes, Jr., M.A., M.D. Associate Professor of Mental and Nervous Diseases, St. Louis University Medical School. Second Edition. 295 pp. 3.75. C. V. Mosby Co. St. Louis. 1923.

This book as an introduction to the study of mental diseases covers that field very well. It is interestingly written, is brief and concise in treatment. The first part is devoted to normal and abnormal psychology, methods of study and treatment. The second part deals with the mental disorders. The author has not burdened the reader with discussions of the late psychology and Freudian theories, and in the main uses but few technical terms so confusing to the average student and busy practitioner. Chapter IV, on psychology and medical practice, may be read with profit by all of the profession.

Wilt.

A Manual of Gynecology and Pelvic Surgery. For Students and Practitioners. By Roland E. Skeel, M.D., A.M., M.S. Formerly Associate Clinical Professor of Gynecology, Medical School of Western Reserve University, etc. Second Edition. With 281 Illustrations. 674 pp. $5.50. P. Blakiston's Son & Co. Philadelphia. 1924.

This volume is intended to furnish a concise, practical working knowledge of gynecology with especial emphasis on diagnosis and treatment. Within a decade radium and the x-ray have established an enviable position in gynecologic therapeutics. Due importance has been given these agencies in the treatment of myopathic hemorrhages and carcinomas of the cervix uteri. Surgical gynecology is curtailed to a certain extent but is covered as completely as possible in a volume of this size. This is a valuable reference work for the specialist and general man alike, the references being especially important to those who do not have ready access to society transactions and medical journals.

Chas. D. Shannon.

Obstetrical Nursing. A Manual for Nurses and Students and Practitioners of Medicine. By Charles Sumner Bacon, Ph.B., M.D. Professor of Obstetrics in the University of Illinois and Chicago Polyclinic, etc. Second Edition. Thoroughly Revised. Illustrated with 126 Engravings. 340 pp. $2.75. Lea & Febiger, Philadelphia and New York. 1924.

This volume is an ambitious one for the nurse but its contents are intended also for the medical profession. One chapter deals quite extensively with anatomy, physiology and embryology, preparatory to the discussion of various maternity subjects. It is a condensed review, profitable for every one's perusal. The following chapters on pregnancy, labor and the puerperium present the essential obstetric facts with which every physician and nurse should be familiar. The nurse who desires considerable detail regarding obstetrics will find it in this volume.

Maternity Nursing in a Nutshell. By Elizabeth H. Wickham, R.N. Graduate of the Boston City Hospital, and Boston Lying-In Hospital Training School for Nurses. With 28 Illustrations. 167 pp. $1.50. F. A. Davis Co. Philadelphia. 1924.

This volume presents the actual experiences of a graduate obstetric nurse. The author states that many nurses on graduating find themselves equipped with a limited knowledge of maternity nursing. Perusal of this little book is intended to supply this deficiency. It does not enter the scientific aspects of pregnancy and obstetrics, but in a compact form presents the essential facts with which every nurse should be familiar in caring for a pregnant and parturient patient. Subdivisions are printed on the page margins, thus affording easy referencts. This is a valuable volume for the practical nurse.

Medical Clinics of North America. Issued Serially, one number every other month. Vol. VII, No. 5, March, 1924. (St. Louis Number.) Octavo of 311 pp. Per clinic year (July, 1923, to May, 1923). Paper, $12.00; Cloth $16.00. Philadelphia and London. W. B. Saunders Co.

This volume contains clinical reports on many interesting medical conditions by leading St. Louis physicians. The heart is featured in a report by Kinsella on hypertension and nephritis; by Schwab on heart disease in a neurologic clinic and Luten on the use of digitalis in different types of heart disease. There are several reports concerning diseases in children, covering nephritis, diphtheria, intracranial hemorrhage. The volume furnishes profitable reading, as do all of this series.

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TRUTH ABOUT MEDICINES

New and Nonofficial Remedies

Cryogenine. Phenylsemicarbazide. Cryogenine is an antipyretic and analgesic. It is claimed that cyrogenine does not affect digestion and that it has scarcely any effect on the circulation and respiration. Cryogenine is claimed to be useful as an antipyretic in febrile conditions. As an analgesic, it is said to be of value in rheumatism, headache, sciatica, gout and in painful conditions generally. Cryogenine is marketed in the form of powder ana 0.5 gm. tablets.

Iletin (Insulin-Lilly) U-40. Each ampule contains 40 units of Iletin (Insulin-Lilly) (see New and Nonofficial Remedies 1924, p. 152). (Jour. A.M.A., May 3, 1924, p. 1443.)

Ethylene for anesthesia. **Aethylenum pro Narcosi.** It contains not less than 98 per cent, by volume of ethylene. Trials on human subjects have confirmed the anesthetic and analgesic value of ethylene as demonstrated on animals. Deep surgical anesthesia is stated to be produced easily and analgesia comes on readily and apparently long before surgical anesthesia is established. Given with oxygen, it has been found more powerful than nitrous oxide for animals and man, and in most cases as effective as ether. Trials indicate that ethylene is of value for the production of surgical anesthesia, and that it has advantages over nitrous oxide. Ethylene for anesthesia is supplied in the compressed state in metal cylinders. To avoid accidental explosion, ethylene must not be brought in contact with a naked flame or an electric spark. Ohio Chemical and Mfg. Co., Cleveland. (Jour. A.M.A., May 17, 1924, p. 1609.)

Desiccated Parathyroid Substance, Wilson. The exterior parathyroids of the ox, freed from fat, cleaned, dried and powdered. For a discussion of the actions and uses of parathyroid gland, see New and Nonofficial Remedies, 1924, p. 224. Desiccated parathyroid substance, Wilson, is marketed in the form of powder and in tablets containing, respectively, 1-20 grain and 1-10 grain. Wilson Laboratories, Chicago. (Jour. A.M.A., May 24, 1924, p. 1693.)

Mead's Powdered Protein Milk. A milk preparation having a relatively high protein content and a relatively low carbohydrate content. Each 100 gm. contain approximately protein 37 gm., butter fat 31 gm., free lactic acid 3 gm., lactose 19 gm., and ash 4.6 gm. When suitably mixed with water, powdered protein milk is said to be useful for correcting intestinal disorders of infants and children. Mead Johnson and Co., Evansville, Ind.

Pollen Antigens-Lederle. In addition to the products listed in New and Nonofficial Remedies, 1924, p. 252, the following have been accepted: Giant Ragweed Pollen Antigen-Lederle; Green Sage Pollen Antigen-Lederle; Lamb's Quarters Pollen Antigen-Lederle; Marsh Elder Polen Antigen-Lederle; Olive Pollen Antigen-Lederle; Pasture Sage Pollen Antigen-Lederle; Southwestern Ragweed Pollen Antigen-Lederle; Western Water Hemp Pollen Antigen-Lederle; Western Ragweed Pollen Antigen-Lederle. Lederle Antitoxin Laboratories, New York.

Pollen Allergen Solutions-Squibb. In addition to the products listed in new and Nonofficial Remedies, 1924, p. 251, the following pollen allergen solutions-Squibb are marketed in packages of two tubes diagnostic solution; in packages of six tubes (assorted) diagnostic solution; in 5 cc. vials for treatment only. Annual Salt Bush Pollen Allergen Solution-Squibb; Arizona Ash Pollen Allergen Solution-Squibb; Arizona Cottonwood Pollen Allergen Solution-Squibb; Ash Pollen Allergen Solution-Squibb; Black Mulberry Pollen Allergen Solution-Squibb; Black Walnut Pollen Allergen-Squibb; Brome Grass Pollen Allergen Solution-Squibb; Calif. Black Walnut Pollen Allergen Solution-Squibb; Careless Weed Pollen Allergen Solution-Squibb; Cedar Pollen Allergen Solution-Squibb; Cocklebur Pollen Allergen Solution-Squibb; Corn Pollen Allergen Solution-Squibb; Dark Leaved Mugwort Pollen Allergen Solution-Squibb; False Ragweed Pollen Allergen Solution-Squibb; Hickory Pollen Allergen Solution-Squibb; Johnson Grass Allergen Solution-Squibb; Lamb's Quarters Pollen Allergen Solution-Squibb; Marsh Elder Pollen Allergen Solution-Squibb; Nettle Pollen Alergen Solution-Squibb; Oak Pollen Allergen Solution-Squibb; Pigweed Pollen Allergen Solution-Squibb; Pine Pollen Allergen Solution-Squibb; Poplar Pollen Allergen Solution-Squibb; Rye Pollen Allergen Solution-Squibb; Sandbur Pollen Allergen Solution-Squibb; Shadscale Pollen Allergen Solution-Squibb; Sheep Sorrel Pollen Allergen Solution-Squibb; Slender Ragweed Pollen Allergen Solution-Squibb; Sweet Vernal Grass Pollen Allergen Solution-Squibb.

The following pollen allergen solution-Squibb are marketed in packages of two tubes diagnostic solution; in packages of six tubes (assorted); in treatment sets consisting of: Set A—ten vials containing consecutive doses (Nos. 1 to 10, inclusive); Set B—Five vials containing consecutive doses (Nos. 1 to 5, inclusive), Set C—Five vials containing consecutive doses (Nos. 6 to 10, inclusive), Set D—Five vials of dose No. 10: Bermuda Grass Pollen Allergen Solution-Squibb; June Grass Pollen Allergen Solution-Squibb; Mugwort Pollen Allergen Solution-Squibb; Orchard Grass Pollen Allergen Solution-Squibb; Ragweed Pollen Allergen Solution-Squibb; Sagebrush Pollen Allergen Solution-Squibb; Timothy Pollen Allergen Solution-Squibb; Western Ragweed Pollen Allergen Solution-Squibb. E. R. Squibb and Sons, New York. (Jour. A.M.A., May 31, 1924, p. 1781.)

PROPOGANDA FOR REFORM

Radium and Radium Emanation. Radium is commonly supplied in the form of radium salts enclosed in containers. Also, tubes containing radium emanation are available. Salts of radium disintegrate at a rate so that 1780 years elapse before the compound loses one-half of the initial activity. On the other hand, radium emanation loses about 0.75 per cent of its activity each hour, and consequently its activitv is practically gone after one month. (Jour. A.M.A., May 3, 1924, p. 1462.)

Liposan. According to the advertising, Liposan is "a Vegetable Lipoidal Solution which has chaulmoogra oil as its 'medicinal element'." Liposan is claimed to be "indicated" in "Abscesses," "Acne," "Anaemia," "Arthritis," "Agitans," "Boils," "Bubo," "Cancer," "Chorea," "Cystitis," "Eczema," "Erysipelas," "Furunculosis," "Herpes," "Hemiplegia," "Ivy Poisoning," "Myalgia," "Neuralgia," "Neuritis," "Peritonitis," "Pyorrhoea," "Infantile Paralysis," "Pneumonia," "Rheumatism," "Synovitis," "Syphilis," "Salt Rheum," "Tubercules," "Tonsilitis," "Ulcerations (Indolent)," "Varicositis." The proprietors, Hoffman and Hicks, have not requested an examination of Liposan by the Council on Pharmacy and Chemistry, and so far the A.M.A. Chemical Laboratory has not examined the product. A physician will be justified in his refusal to accept the unproved claims of the manufacturer. He might be justly criticized were he to administer intravenously a product which, so far as he knows, is unstandardized and of wholly questionable value. (Jour. A.M.A., May 3, 1924, p. 1462.)

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ADDRESS

SOME ACTIVITIES OF THE STATE MEDICAL SOCIETY*

E. B. McDaniel, M.D.
PORTLAND, ORE.

At this time I wish to extend to each member of the Oregon State Medical Society my sincere thanks for the honor conferred in electing me your president for the past year. It has been my earnest endeavor to unite the entire medical profession into one compact body, for I am a confirmed believer in the old adage, "In union there is strength."

In this state there are 1300 regular licensed physicians and surgeons, of whom only 460 are members of the Oregon State Medical Society. Membership in our state society should be 100 per cent. In no other way are we qualified to cooperate and protect the public health as it should be done, and which is our sacred duty to perform. There has always been a serious question in my mind, as to whether the regular physicians are not in some way responsible for the large number of quack organizations now existing, in that our medical colleges have neglected to give a series of lectures covering these fads, and in this way equipping the new graduates with a better means of combatting them on a more scientific basis, and to explain their fallacies in most cases. At the same time I think we are prone to overlook the good results obtained from physiotherapy as given by proper massage, application of heat or electricity to many cases under our care, who would continue to be our patients, were not the proper medical procedure overlooked.

During the past year the Oregon Public Health League has been very closely united with the Oregon State Medical Society, in that all members of the latter have become active members of the Public Health League and the League has become our Committee on Public Health and Legislation, and I can assure you has been our most active committee during the past year. The Executive Committee of the Oregon Public Health League has met each Wednesday during the year and at all times has given due consideration to all matters relative to public health and legislation, affecting the entire state. I wish to give sincere thanks to this committee for their active support and diligent work.

I am also glad to report that the Oregon Public Health League and the Oregon State Medical Society now have a full time executive secretary in the person of Mr. Frank S. Ward, who has been elected to this position. During his service it has been my pleasure to be very closely associated with him in many ways, and at all times I have found him very competent and sincere in all his work. I wish to assure all the members of the state society that at any and all times they will find Mr. Ward willing to furnish any information or render any service that may be requested. It is my earnest desire to have all the members of the society become personally acquainted with Mr. Ward, as in this way they can more fully appreciate the justice of his nick name, "Happy".

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* President's Address, read before the Fiftieth Annual Meeting of Oregon State Medical Society, Portland, Ore., May 27-29, 1924.

Another great help to the society rendered by the Oregon Public Health League is the League Bulletin, issued monthly. Every member of the state society is entitled to a free copy of the bulletin, and if you are not receiving it regularly, please notify the executive secretary so that your name may be added to the mailing list. The League Bulletin has been an excellent medium for conveying knowledge direct to the doctors and public, and many worthy articles have appeared in its columns during the past year.

The Councillors of the Oregon State Medical Society have met regularly during the past year, and have given freely of their time and advice to the welfare of the society. Dr. W. T. Williamson, trustee of the American Medical Association, and Dr. Joseph A. Pettit, delegate to the American Medical Association, have frequently attended the Councillors meetings and have given much timely advice, for which we all thank them. A full report of the Concillors meetings will be given by Dr. C. L. Booth, the secretary.

Another very important and active committee has been our Medical Legal Defense Committee. There have been several malpractice suits brought against members of our society during the past year, and I am very glad to report that in every case the committee has been successful in defending the doctor and securing judgment in his favor. This committee will also submit a full report of its activities. I am sure that every member of the state society feels under deep obligation to this committee for its excellent service.

At this time I wish to call your attention to our Blanket Liability Insurance Policy, carried with the General Accident Insurance Co., for which Mr. W. R. McDonald is general agent. This policy puts every member of the state society on an equal footing, regardless of his location. This is something never before obtained, and is of material benefit to every member of the society. During the past year the firm of Carey & Kerr have been our legal representatives and submitted bills for all such services rendered. Under the general accident blanket policy we eliminate all legal service bills, as this policy provides us with attorneys and all legal services. Carey & Kerr are also the attorneys for the General Accident Insurance Co., hence we maintain the same service for the society without additional cost, thus saving us several hundred dollars a year. For this reason I think every member of the state society should avail himself of the policy and save dollars for other necessary expenditures.

During the past year I have visited the following component medical societies: The City and County Medical Society of Portland. I have met with this society several times during the past year and have always found everything in first class shape, with Dr. Calvin S. White, President, always on the job.

On June 29 and 30, 1923, I visited the Eastern Oregon District Medical Society. The meeting was held at Willowa Lake in the Elks Club rooms. This was the most ideal location for a meeting of this kind ever held anywhere. The beautiful lake, rugged mountains, and big trees made a background fit for the gods. This society is functioning in good shape and the organization is well in hand. The increase in dues was explained and met with unanimous approval of all present. Those present from Portland were Drs. A. C. Smith, Frederick Stricker, Ralph Walker, W. T. Williamson, Frank B. Kistner, Blair Holcomb and C. E. Sears.

On February 9, 1924, I visited the Coos and Curry County Medical Society. This society has not been dead, but just sleeping during the past year. In fact, no meeting of any kind had been called during this time. On Feb. 5, Frank S. Ward, our secretary, went to Coos Bay, met with the doctors and arranged for a meeting of the society at noon on Feb. 9. Dr. Frederick Stricker, Mr. Ward and myself met with them. There were twelve members present. Past difficulties were ironed out and a new election of officers was held. A great amount of good fellowship was brought out at this meeting and we feel confident that this society will function properly from now on.

On March 22 we visited the Mid-Columbia District Medical Society at The Dalles. On this trip I was accompanied by Drs. Otis B. Wight, Wilson Johnston, Ralph Fenton, Frederick Stricker, C. L. Booth and Mr. Ward. This society has also been sleeping for several months, in which interval no meetings were held. We found considerable dissension among the physicians but hoped at that time we had overcome some of this feeling and that the society might function again and take its proper place as a working unit of the state society. I have since heard that the sailing is none too smooth and that breakers are again showing. Personally, I am very sorry to hear this, as every district society is an important branch of the state society and I know that the latter is of material benefit to every regular physician in the state.

On March 25 I visited the Clatsop County Medical Society at Astoria. This society has been quietly resting for some time but on this occasion they had a first class meeting in the new hotel. I was told that every doctor residing in the district was present with the exception of one. We had a very fine banquet with several good speeches and a great deal of enthusiasm was shown. I feel that this society has fully awakened and will function in every way. On the trip I was accompanied by Drs. Calvin S. White, President of the City and County Medical Society, Frederick Stricker, C. L. Booth and Mr. Ward.

On March 29 a special meeting was called for the Central Oregon Medical Society at Bend. I was unfortunately sick at this time and unable to attend this meeting. Dr. Stricker and Mr. Ward attended and found the physicians of this district wide awake and doing. The regular election of officers was held and the society started on a very progressive new year, with Dr. J. C. Vandervert as President, and Dr. R. N. Hendershott as Secretary.

On May 3 Mr. Ward arranged for a meeting of the Tillamook County Medical Society in Tillamook, this being their first meeting since Nov. 7, 1923. At this time pressing matters detained me at home and Dr. Otis B. Wight kindly consented to take full charge. Dr. Wight reported a good meeting. The annual election of officers was held, resulting in the election of Dr. David Robinson as President and Dr. R. E. Riggs, Secretary. Dr. C. L. Booth, secretary, and Frank Ward, executive secretary, accompanied Dr. Wight to this meeting. They all reported this society wide awake and expect it to properly function from now on.

On May 13 I visited the Southern Oregon Medical Society at its 33rd annual meeting, held in Roseburg. There were thirty members present, all taking an active part in the meeting. Dr. C. B. Wade is President and Dr. W. P. Holt Secretary. This Society is well organized and doing first class work. Drs. Eugene Rockey, Lyle B. Kingery, C. Ulysses Moore and myself were present from Portland. Many good papers were read and very ably discussed.

On May 18 the regular meeting of the Central Oregon Medical Society was held at Bend. On May 17, accompanied by Drs. U. C. Cole, Eugene Rockey and R. B. Brandon, D.D.S., we left for Bend. Upon arrival we were met by a delegation of Bend physicians. To say we were royally entertained does not express it. The meeting was held Sunday night at the Piolet Butte Inn with twenty physicians present, one driving ninety miles from Silver Lake to attend. With such display of enthusiasm any medical society is bound to prosper and be of great benefit to all of its members. I am very glad to report the Central Oregan Medical Society in good shape and properly equipped to function in every way.

One of the main facts brought to my mind by these visits is that not all the district societies fully realize their own responsibilites to the state society, nor do they realize the many things the state society is trying to do their own good. This condition, further, must convince us all that the state society has a large amount of educational work to do among its own members and this can be done only by closer personal contact with each other. Also I believe one of our most important functions is along the line of general educational work among the laity.

It has been truthfully said that in the midst of life we are in death, and the record of the past year reminds us that thirteen members of the Oregon State Medical Society have been called to rest.

Dr. C. E. Barton, Baker, Oregon, Oct. 27, 1923.
Dr. J. M. Batcheller, Portland, Ore., Mar. 5, 1924.
Dr. Wellington H. Boyd, Portland, Ore, Feb 26, 1924.
Dr. W. L. Gottell, Portland, Ore., April, 1924.
Dr. W. H. Davis, Albany, Ore., Dec. 14, 1923.
Dr. E. O. Dutro, Hood River, Ore., Mar. 11, 1924.
Dr. F. G. Hewitt, Independence, Ore., May 16, 1924.
Dr. H. C. Jefferds, Portland, Ore., July 23, 1924.
Dr. J. K. Locke, Portland, Ore., Mar. 14, 1924.
Dr. S. Loughridge, Grants Pass, Ore., Jan. 24, 1924.
Dr. C. Stuart Menzies, Portland, Ore., Sept. 10, 1923.
Dr. G. W. Southworth, Salem, Ore., Jan. 17, 1924.
Dr. W. L. Wood (Honorary Member), Portland, Ore., July 15, 1923.

"Rest comes at length and though life be long and dreary
The day must dawn and darksome night be past;
Faith's journey's end is welcome to the weary
And heaven, the heart's true home, will come at last."

Stomatitis Following the Injection of Mercurochrome-220 Soluble in a Tuberculous Sinus. In a case cited by Chester C. Gug, Chicago (Journal A. M.A., June 28, 1924), discharging sinuses in the region of the greater trochanter communicated, thru the acetabulum, with an abscess cavity in the pelvis on the inner surface of the ilium. March 22, 15 c.c. of a 1 per cent solution of mercurochrome-220 soluble was injected into the sinuses after irrigation with physiologic sodium chlorid solution. Ths was repeated daly, and a marked decrease in the amount of the discharge was noted. Improvement continued until April 10, when the patient began to complain of soreness in the gums, profuse salivation, loosening of the teeth and diarrhea.

ORIGINAL CONTRIBUTIONS

OBSERVATIONS IN THE DIAGNOSIS AND TREATMENT OF BRAIN INJURIES *

William Sharpe, M.D.

NEW YORK CITY

(Professor of Neurosurgery, Polyclinic Hospital and Postgraduate School)

Part I

During the past fifteen years a tremendous advance has been made in the diagnosis and treatment of neurosurgical conditions. The progress is due to three main causes: first, the pioneer work of men like Horsley, Krause, Von Eiselberg and in this country of Keen and Hartley, and more recently, Cushing; second, better team work between the neurologist and the neurosurgeon, in that earlier diagnoses are more probable and thus the patient is less damaged by the time operative treatment is advised and the surgeon himself understands the principles at least of neurology; and, third, an improved surgical technic, making possible the operative treatment of lesions of the central nervous system with a comparatively low mortality and the patient in an improved condition after the operation.

The discouraging field of neurosurgery is the treatment of brain tumors (on account of their high percentage of malignancy—75 per cent), brain abscess (the mortality of true brain abscess, a subcortical lesion, being almost 70 per cent), and of the condition of internal hydrocephalus, a complete blockage of the ventricles (and not the usual condition of external hydrocephalus in which the treatment is most encouraging), owing to the great difficulty and at present the impossibility of establishing satisfactory drainage.

The encouraging field of neurosurgery consists of the treatment of trifacial neuralgia by the severance of the posterior sensory root of the Gasserian ganglion with a mortality of less than 1 per cent; the repair of traumatic lesions of the brachial plexus and particularly those lesions occurring at the time of birth and thus named brachial birth palsies; surgical lesions of the spinal cord, as tumors (much less frequently malignant than those of the brain), traumatic conditions, etc.; peripheral nerve injuries; and lastly but most encouraging of the entire field of neurosurgery, the treatment of brain injuries with and without a fracture of the skull.

BRAIN INJURIES IN ADULTS

1. *Acute.* The diagnosis and treatment of acute brain injuries has been retarded very much by the nomenclature "fracture," when it is now well known that the presence or not of a fracture of the skull is possibly the most unimportant part of the pathology of cranial injuries, both in the diagnosis and in the treatment to be afforded to the patient. (Naturally all depressed fractures of the vault should be elevated or removed for fear of future complications of cortical irritability, etc., and these depressed fractures will not be considered in this paper). On the other hand, the most important pathology to be considered in brain injuries is the presence or not of an increased intracranial pressure, whether due to hemorrhage or to cerebral edema. If hemorrhage is present and of not sufficient amount to cover the convolutions themselves, then this fluid blood is found in the sulci about the supracortical veins. It is this blood, if not absorbed or satisfactorily drained, that permits an organized residue to form and thus to become an obstruction of varying degree to the future absorption of the cerebrospinal fluid. In the diagnosis of these conditions, the routine neurologic examinations are aided by careful ophthalmoscopic findings of the fundi and by the accurate estimation of the intracranial pressure by the method of lumbar puncture, as registered by the spinal mercurial manometer. But no patient should be subjected to prolonged examinations and tests, if that patient is in a condition of shock, for such examinations will not aid the shock of the patient but rather prolong it, and our first consideration should be the general treatment of shock when present.

In the treatment of these acute brain injuries I have had the opportunity to examine a large series of them (over 1000) and in this series the expectant palliative treatment of quiet, ice helmet, warmth, shock measures, etc., was successful in almost two-thirds, 56 per cent of them. This expectant treatment was frequently aided by the spinal drainage of repeated lumbar punctures and these were the patients, in whom the increased intracranial pressure did not exceed twice the normal, the normal pressure being 6-8 mm. Hg., as registered by the spinal mercurial manometer. The use of concentrated solutions of magnesium sulphate to lessen the cerebral edema has not been effective in my own experience in these acute cases, but this method has proved of value in the chronic cerebral edemas associated with the condition of brain tumor, etc., in which the cerebral edema is rather an intracellular true edema than the "wet" edematous brain so frequently associated with brain injuries.

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* Read before the Fiftieth Annual Meeting of Oregon State Medical Society, Portland, Ore., May 27-29, 1924

The operative treatment in this series was necessary in less than one-third (30 per cent) of the cases and was advised only in those patients having an increased intracranial pressure of over twice the normal and in whom the expectant palliative method of treatment, together with repeated lumbar punctures of spinal drainage, failed to lower the pressure. The operation of choice was the subtemporal decompression and cranial drainage. Those patients entering the hospital in a moribund condition and dying within six hours after admission from shock, medullary edema (decompensation), other internal injusies, and for whom no operative treatment was naturally advised, numbered almost one-seventh (14 per cent), in this series. The total mortality was 33 per cent and, if we subtract the 14 per cent of moribund cases, the mortality is lowered to 19 per cent. The operative mortality was 39 per cent and naturally these patients operated upon were the more seriously injured, not only from the standpoint of recovery of life but from the standpoint of future normality. The operative treatment depended upon a marked increase of the intracranial pressure of more than twice the normal, whether this increased pressure was due to hemorrhage or to cerebral edema and these two factors form the most common and important pathology in brain injuries, it being rare (in only 6 per cent of the cases) for a gross primary lesion of the brain, such as laceration and subcortical hemorrhage, to occur.

In the operative treatment of brain injuries, there are two periods in which *no* operation should be performed and it has been the neglect of this fundamental consideration that the operative treatment of selected cases of brain injuries had become almost discredited until within the past few years. The first period in which *no* operation should be performed is during the initial stage of shock, when the temperature is subnormal and the pulse and respiration rates are above 120 and 34 respectively, and the blood pressure below 100. To advise a cranial operation or even extensive prolonged examinations and tests upon these patients in the condition of severe shock merely lessens the chances of recovery, and if the patient does survive, then he recovers in spite of the additional shock of the examination and of the operation.

The second period during which *no* operation should be performed may be termed the terminal one of medullary edema (decompensation), characterized clinically by rapidly increasing pulse and respiration rates and rising temperature, but by a falling blood pressure. The patient may have been "doing nicely" for a period of several days and then he changes rapidly, so that the picture approximates the clinical syndrome as described above and then, since it is feared the patient will die, it is often "thought advisable to give him a chance;" but these patients all die, having the condition of medullary edema, whether operated upon or not, the operation merely hastening the exitus.

However, in the treatment of patients having brain injuries, their intracranial status can be most accurately estimated by repeated lumbar punctures and ophthalmoscopic examinations and in this manner the clinical signs of medullary compression, such as retarded pulse and respiration rates and a possible increasing blood pressure, can usually be anticipated and thus the dangerous condition of medullary edema be prevented by the rational treatment of early subtemporal decompression and cranial drainage in that small percentage of selected cases having a high intracranial pressure (less than one-third of all cases). The use of repeated punctures of the cisterna magna for the drainage of subtentorial hemorrhage with marked signs of medullary compression may be of great value in selected cases.

2. *Chronic Brain Injuries in Adults.* It has become quite a common expression among the laity, that "once a person has had a fracture of the skull then that person is never the same again." To a large extent this impression is a correct one, at least it was so during the period of over ten years ago, when the attitude of the medical profession was concerned merely with the recovery of life of the patient rather than the return to complete functional normality. In the absence of gross cerebral lesions of the brain as a cause of death in a large series of consecutive autopsies of patients dying from cranial injuries during the four year period of 1912 to 1916 in Bellevue Hospital, and the demonstration in these cases that the usual findings were "wet" edematous brains associated or not with varying degrees of hemorrhage along the sulci about the supracortical veins, it was most interesting to study the clinical records of four of the large hospitals in New York City of their patients having had cranial injuries during the decade of 1900 to 1910. The total mortality ranged from 46 to 64 per cent, the operative mortality being as high as 87 per cent, due to the operation being performed during the two periods when *no* operation should be even considered.

This study was made in the year 1912. Only 34 per cent of the patients discharged as "well," "cured" and "improved" were located, but of these patients 67 per cent were not well and were still suffering as the result of the cranial injury, the chief complaints and signs being headache, dizziness, early fatigue, change of personality to the depressed or to the irritable type and in a small percentage of them convulsive seizures. It was rather surprising to find in a large percentage of these patients evidences of an increased intracranial pressure, as disclosed both by the ophthalmoscope and by the lumbar puncture, and thus indicating the chronic condition of "wet" edematous brains. At operation even at this late date after the injury or at autopsy, there was disclosed an edematous, "wet" brain under varying degrees of increased pressure and along the supracortical veins in the sulci was exposed a cloudy whitish new tissue formation—the organization—residue of a former layer of supracortical hemorrhage which could not be absorbed thru the normal channels of excretion—the stomata of exit in the walls of the supracortical veins, thru which almost 80 per cent of the cerebrospinal fluid is normally excreted.

In the acute cases, when a supracortical hemorrhage is present, it forms a layer of varying thickness over the cortex in the extreme cases, but if the amount of hemorrhage is of less degree and not sufficient to cover the convolutions themselves, then it naturally collects in the depressed grooves of the sulci and about the supracortical veins, as is frequently exposed at operation or at autopsy. If this blood can be entirely absorbed together with the cerebrospinal fluid thru the walls of the supracortical veins, then no organization residue forms, but if the amount of hemorrhage is more than can be absorbed by this main channel of excretion, then there remains a varying amount of blood in the sulci which eventually, within a period of days, clots and finally organizes to become new tissue of fibrous character and thus presenting the appearance of cloudy whitish new tissue formation, as exposed at later operation or at autopsy. It is this organization-residue which causes a parital blockage in the normal absorption of the cerebrospinal fluid, and thus the resulting "wet" edematous brain under varying degrees of increased intracranial pressure—the *organic* basis for many of the symptoms and signs occurring in patients having had a cranial injury, as headache, dizzy spells, early fatigue, change of personality and even convulsive seizures themselves, all of these symptoms and signs being due more to the factor of an existing increased intracranial pressure rather than to a gross cerebral lesion, such as lacerations, cortical hemorrhage, etc.

Posttraumatic Neurosis. In this connection of chronic brain injuries, the condition of posttraumatic neurosis is one that must always be considered, a functional condition to be differentiated from an organic one. In posttraumatic neuroses the emotional factor of fear and shock at the time of the injury is to be remembered, together with the constitutional make-up of the patient, whether neuro- and psychopathic or not; and also in a large percentage of these cases, the factor of hope of damages to be obtained, this latter complication being frequently an all absorbing one. If a legal suit is pending, it is not possible to improve the condition of these functional cases by any known method of treatment; after the suit is settled and especially if satisfactorily to the patient, these are the patients having functional conditions which improve very rapidly and usually within months or one year following the injury. However, no such patient should be considered as having a functional condition of neurosis without careful neurologic examinations having been made, and in each case competent ophthalmoscopic examinations and a lumbar puncture with an estimation of the pressure of the cerebrospinal fluid as registered by the spinal mercurial manometer, so that it is definitely ascertained that there is present no increase in the pressure of the cerebrospinal fluid. Otherwise the patient, having an increased intracranial pressure of chronic cerebral edema and thus an organic basis for the symptoms and signs, may be incorrectly diagnosed, for these patients having organic lesions do not "clear up" and improve following a mere satisfactory settlement of the legal suit. These organic cases are ones now being frequently overlooked and neglected under the classification of posttraumatic neurosis.

BRAIN INJURIES IN CHILDREN

(Under twelve years of age.)

1. *Acute.* The diagnosis and treatment of acute brain injuries in children are the same as in adults, except that the operative method of treatment to lower a marked increase of the intracranial pressure due to hemorrhage or to cerebral edema is much less frequent, owing to the fact that acute cerebral edema following cranial injuries in children occurs comparatively rarely. Apparently the intracranial vascular mechanism of the child adjusts itself much more rapidly and easily to the effects of cranial trauma, so that an increased amount of cerebrospinal fluid is either not secreted or, if secreted in

large amounts, then the excess is absorbed without difficulty, so that the condition of acute cerebral edema only occurs in the extreme cases. For this reason the operative treatment of acute brain injuries in children has only been necessary in 16 per cent of the patients, whereas in adults the operative treatment was advised in 30 per cent. It may be stated also that children will stand the effects of brain injuries much better than adults and I believe this is also due to the less frequent occurrence of extensive cerebral edema in them.

2. *Chronic Brain Injuries in Children.* An observation worthy of interest is the fact that *the younger* the child at the time of the acute brain injury and in those associated with an intracranial hemorrhage, as indicated by the lumbar puncture having revealed bloody cerebrospinal fluid, *the greater* is the similarity of this chronic condition to the chronic condition of cerebral spastic paralysis following an intracranial hemorrhage at the time of birth with an increased intracranial pressure. That is, the symptoms and signs, especially the presence of spasticity in varying type and degree and the associated mental retardation of varying degree, are most similar in those patients the younger the age at which the intracranial lesion occurs. These are the ones having a definite increase of the intracranial pressure, as disclosed by the ophthalmoscope and the lumbar puncture, and at operation or at autopsy no gross lesion nor laceration of brain substance is exposed, but rather "wet" edematous brains under varying degrees of increased pressure and along the supracortical veins in the sulci is revealed a whitish cloudy new tissue formation, the organization-residue of a former layer of supracortical hemorrhage and thus the pathologic obstruction to the normal absorption of the cerebrospinal fluid thru the walls of the supracortical veins. This pathology has been proven to be the same as that disclosed in the chronic brain injuries of adults in those selected cases having an increased intracranial pressure (chronic cerebral edema). In the younger patients and especially in those having had cranial injuries under the age of three years, the physical and mental impairments and retardation are undoubtedly due to the increased intracranial pressure having occurred before the pyramidal tracts and higher cortical centers had fully developed, and thus this prolonged increase of the intracranial pressure produced a clinical picture of cerebral spastic paralysis with mental retardation, just as occurs following an intracranial hemorrhage at the time of birth and of such an amount that it cannot be entirely absorbed by the natural means of absorption.

Treatment. The use of thyroid and thymus therapy to lower the increased intracranial pressure of chronic cerebral edema by lessening the amount of cerebrospinal fluid secreted has been successful in only a small percentage of these patients (8 per cent), so that the operative treatment of subtemporal decompression and cranial drainage in these chronic cases, just as in the chronic cases of adults, was advised as the only means known of lowering the increased intracranial pressure. A marked improvement has resulted in the majority of these patients, as shown by a lessening of spasticity, definite mental improvement and a diminution of the cortical irritability, but none of these chronic cases can be considered cured to the degree that they are as normal and can develop into as normal individuals as if the intracranial hemorrhage had not occurred. This is true of all cases of chronic brain injuries, whether occuring at birth or later in life, and it strongly impresses one with the advisability of treating these conditions at the time of the acute lesions, when the blood is in fluid form, so that if the natural means of absorption are not sufficient to "take care of" all of the free blood, then repeated lumbar punctures of spinal drainage are to be urged and, if this method of drainage is not sufficient, then the subtemporal decompression of cranial drainage should be instituted *early*, in the hope that no organization—residue of hemorrhagic clot will remain to produce future complications, both physically and mentally.

PART II

BRAIN INJURIES OCCURING AT THE TIME OF BIRTH

1. *Chronic Brain Injuries Resulting from an Intracranial Hemorrhage at the time of Birth.* It is most interesting to note in the literature that Mr. Little, of London, in 1843, in his first monograph upon "The Deformities of the Human Frame," stated that in his opinion the chronic condition of cerebral spastic paralysis occurring in children resulted from a lack of development and agenesis of the cerebral cortex or from a former meningitis (a destructive process), and that he had observed that a small percentage of the cases apparently were due to a difficult labor. After a period of further study and especially of postmortem examinations of a large series of patients, it is impressive to note that in the second monograph of Mr. Little upon this subject in 1862 (19 years later), upon, "The Influence of Abnormal Parturition, Difficult Labors, etc., upon the Mental and Physical Condition of the Child," he states that in his opinion 75 per cent of

these cases of cerebral spastic paralysis result from an intracranial hemorrhage at the time of birth.

Yet it is most surprising to realize that in the literature upon this subject since this date and until within the last ten years, this second monograph of Mr. Little has been practically overlooked, and the chronic condition of cerebral spastic paralysis has been considered as the so-called Little's disease and due to a lack of development of cerebral tissues or to a destructive meningitic process and not to the usual cause, an intracranial hemorrhage at the time of birth. Mr. Little, however, and also subsequent observers did consider that the intracranial hemorrhage at the time of birth produced a primary gross lesion of cerebral tissue itself and, therefore, an irreparable damage to the brain, so that when the diagnosis of Little's disease was made, that diagnosis indicated and presupposed a hopeless ocndition. In this connection, it may be stated that the lack of cerebral development was most frequently attributed to some taint in the heredity, lues and to various developmental factors, all most discouraging to parents hopeful of normal children.

In 1913, I became interested in this chronic condition of cerebral spastic paralysis and, in taking careful histories of a large series of patients at two of the orthopedic hospitals in New York City, and then by thoro neurologic examinations including the routine ophthalmoscopic and lumbar puncture tests, it was surprising to note that in a small percentage (12+ per cent) of these patients there were evidences of an increased intracranial pressure of chronic cerebral edema. Occasionally, in a very small number of the older patients, the x-ray disclosed evidences of convolutional markings of the inner table of the vault, due to its atrophy resulting from the prolonged increase of the intracranial pressure.

The history of these chronic patients having the condition of cerebral spastic paralysis is rather instructive. During the past ten years, up to January, 1923, I have examined personally 5,192 children, and of this total number examined, 671 (12+ per cent) have had an increased intracranial pressure as disclosed at lumbar puncture. The operative and postmortem findings have disclosed "wet" edematous brains under varying degrees of increased pressure, and along the supracortical veins in the sulci was a whitish cloudy new-tissue formation, reported pathologically as being the organization-residue of a former layer of hemorrhage which had occurred most probably at the time of birth. Gross cerebral lesions of intra and subcortical hemorrhagic cysts, old cerebral lacerations, etc., were disclosed in only 6+ per cent.

The histories revealed the following data: 81 per cent first children, 72 per cent males, 95 per cent full term babies, 90 per cent difficult prolonged labors, 76 per cent forceps used as last resort, 17 per cent breech deliveries; in 8 per cent pituitrin had been used.

During the first week, the following observations had been made: 64 per cent more drowsy and stuporous than normally, 23 per cent refused to nurse, 78 per cent lessened normal demand for food, 39 per cent muscular twitchings, especially of orbital muscles and fingers, 17 per cent general convulsive seizures were present, 18 per cent tincteroid appearance was present.

Within two weeks after birth 61 per cent were considered well or normal, if indeed anything abnormal had been suspected. Within one month after birth, 82 per cent were considered normal.

Within the first year and usually around the seventh month after birth, 79 per cent of the children were not developing as they normally should, such as holding up the head and later beginning to sit up, and at this time, within the first year, the development of spasticity of varying degree and type was usually observed. Later the child did not walk or learn to talk within the usual time and it was this development of a chronic condition in an apparently normal child that was most mysterious, to say the least, and its presence was ascribed to almost every possible cause. In this connection, I may state that the Wassermann test of the cerebrospinal fluid was positive in only one-half of one per cent (1 in 200).

Treatment. The treatment of this chronic condition of cerebral spastic paralysis depends entirely upon the presence or not of an increased intracranial pressure: (a) Without a definite increase of the intracranial pressure and, therefore, the cerebral damage having already occurred, the treatment is limited to the various orthopedic measures and to mental training. To lessen the spasticity, numerous peripheral nerve operations have been devised, and recently even the severance of the paravertebral sympathetic ganglionis system. (b) With a definite increase of the intracranial pressure, if this increased pressure is not over twice the normal (the normal being 6-8 mm. Hg.), thyroid and thymus therapy may be tried in the hope that this mild increase of the intracranial pressure can be lowered to normal by lessening the amount of the cerebrospinal fluid secreted. However, if the increased intracranial pressure is over twice the normal (above 16 mm. Hg.), the operation of subtemporal decompression and cranial drainage may be considered, in the hope that a sufficient amount of the blocked cerebrospinal fluid can be drained in this manner and thus a lowering of the increased intracranial pressure be effected with a resulting improvement of the child's condition both physically and mentally.

The operative and postmortem findings in these selected chronic cases of cerebral spastic paralysis have been practically the same as disclosed in the chronic cases of brain injuries in adults and also in the chronic cases of brain injuries which have occurred in young children, and the original pathology is apparently the same in these cases—a supracortical layer of hemorrhage of greater amount than can be normally absorbed thru the walls of the supracortical veins; its collection in the sulci about the supracortical veins and the subsequent formation of an organization-residue of the hemorrhagic clot and thus the resulting partial blockage in the normal absorption of the cerebrospinal fluid, producing "wet" edematous brains under varying degrees of increased pressure. The younger the child at the time of the development of this increased intracranial pressure, and particularly, therefore, those cases due to an intracranial hemorrhage at the time of birth, the greater will be the physical and mental retardation and the more marked the condition of spastic paralysis. The older the patient at the time of the intracranial hemorrhage, as in adults, the less marked are the gross physical and mental impairments, but the more marked are the subjective complaints, such as headache, dizziness, early fatigue and changes of personality and the greater are the emotional and psychic impairments.

The prognosis in the treatment of these chronic patients depends chiefly upon the age of the patient and the severity of the intracranial lesion. The younger the child at the time of the lowering of the increased intracranial pressure, the greater the improvement to be expected, but *not one* of these chronic patients can be expected to become normal as tho the hemorrhage had never occurred, no matter what the treatment, because the treatment of these chronic conditions is always a *late* treatment. The ideal time for the treatment of brain injuries of the newborn, just as in brain injuries of adults, is at the time of the acute condition, when the intracranial hemorrhage itself can be drained—in the adults after the period of initial shock has subsided and in the newborn within a period of one week.

2. *Acute Brain Injuries of the Newborn* Pathology: For years the acute condition of intracranial hemorrhage of the newborn has been a pathologic study of postmortem findings rather than their clinical recognition and, therefore, limited to a consideration of the gross lesions and of the extreme forms of intracranial hemorrhage of sufficient amount to cause the death of the baby. Years ago, Cruveilheir wrote that one-third of the deaths of the newborn were due to intracranial hemorrhage. After Little described his findings, in 1862, and McNutt, in 1885, confirmed this opinion of the relationship of intracranial hemorrhage of the newborn and cerebral spastic paralysis, very little attention to this subject of intracranial hemorrhage in the newborn was given in the literature, until the last decade when a greater interest has been aroused. Numerous investigators of the postmortem findings, particularly Warwick, Capon and others, have stated that at least fifty per cent of the deaths in the newborn are due to a gross intracranial hemorrhage, resulting from a rupture of the tentorium, falx, large sinuses and of the supracortical tributaries of the longitudinal sinus, etc. And then the clinical observations of Sidbury, Brady, Green, and others, have added to the clinical picture of a condition, the recognition of which, Huenekens states, is the most neglected phase of the care of the newborn and yet the most important one.

During the period of 1913 to January 1, 1923, I had the opportunity of examining in consultation and treating forty-six newborn babies within the first two weeks, the diagnosis being a serious intracranial lesion, most probably hemorrhage following a difficult labor, with and without the use of instruments. The acute condition of these children was considered of such grave character that early death was feared and it was hoped that possibly a cranial operative procedure might offer the child a chance of recovery of life, at least. Lumbar puncture was performed on all but two (these two having died before the tests could be performed) and free blood, under varying degrees of increased pressure, was found in the cerebral spinal fluid of 87 per cent of those patients, tested during the first week after birth. During the second week, and especially later, the lumbar puncture becomes of increasingly less value as a diagnostic aid, the fluid usually coagulating within the first ten days. Repeated lumbar punctures for spinal drainage were used in four of the milder and earlier cases within the first week, with the hope that the intracranial hemorrhage could all be drained in this simple and safe manner, but in only two of them, after four and seven lumbar punctures respectively, every twelve hours, did the fluid become clear and of normal pressure.

This method of spinal drainage should be attempted in all but the very extreme cases of extensive intracranial hemorrhage, under high pressure, within the first week after birth. If the cerebrospinal fluid does not become clear or the pressure became normal and remain normal, then the cranial operation of modified subtemporal decompression and drainage should be considered. The operative and postmortem findings in 100 per cent of these acute extreme cases disclosed subdural, supracortical and subarachnoid hemorrhage of varying degree. If not of sufficient amount to cover the convolutions, then the free blood was found in the sulci about the supracortical veins and always associated with a high degree of cerebral edema.

During the last three years, I became more and more impressed with the fact that these acute cases of extensive intracranial hemorrhage of the newborn, to the degree of producing profound unconsciousness, inability to nurse and even convulsive seizures, were almost the only ones being recognized by the obstetrician with any degree of certainty, the cases of milder degree and less extensive intracranial hemorrhage at time of birth not producing marked clinical signs of its presence, owing to the fact that the cerebral cortex at this early age is not highly developed—the newborn child being more of a spinal than a cerebral animal. Also, the histories of chronic cases of cerebral spastic paralysis were very suggestive, in that the large majority of babies were first-born, full-term boys, delivered after a difficult labor, with and without the use of instruments, and in whom the clinical signs, even when observed, were often not more than a slight drowsiness, difficulty in nursing and an occasional muscular twitching, and so aften ascribed to "nothing at all;" the child having suffered from the difficult labor, such a condition might be expected and then would "clear up."

Fortunately, in the mild cases of small hemorrhage, frequently associated with no definite clinical signs at all, the natural means of absorption were undoubtedly often sufficient to "take care of" the hemorrhage, so that no supracortical residue of organized new tissue formation of the layer of clot remained to block the normal absorption of the cerebrospinal fluid; these patients apparently became normal and remained so. Unfortunately, in those patients with more extensive hemorrhage and in whom clinical signs during the first ten days after birth were usually noted, as indicated in this series of chronic cases (mild stupor, difficulty in nursing and an occasional muscular twitching), the condition apparently did "clear up" within the first two or three weeks but only temporarily so, for, after a period of several months of apparent normality, these children began to exhibit, within the first and second years of age, the definite signs of physical impairment and mental retardation—the typical condition of cerebral spastic paralysis. Naturally this later development of a chronic condition in an apparently normal child was most puzzling and has been ascribed to numerous causes, lack of development, a former meningoencephalitis, syphilis, heredity and other causes.

Realizing that the ideal time for treatment of this traumatic condition of the newborn, just as in the cases of traumatic intracranial hemorrhage in adults with and without a fracture of the skull, is during the *acute* stage, at the time of birth during the first week, when the intracranial hemorrhage can be drained in fluid form and thus the danger of the later physical and mental impairments be lessened and even avoided, and *not* during the chronic stage (months and years later when the cerebral cortex may have been or has been permanently damaged), and suspecting that this condition of intracranial hemorrhage of the newborn was occurring more frequently and much more commonly than had been conceived owing to the paucity and even lack of symptoms and signs at the time of birth, I obtained the permission in January, 1923, for performing a series of lumbar punctures on consecutive newborn children, at the City Hospital, Welfare Island, New York City, thru the courtesy of Drs. Wilbur Ward and F. A. Dorman, in whose services the following observations have been recorded in three hundred and sixty-four consecutive newborn babies.

It was, indeed, surprising to find free blood in varying amounts in the cerebrospinal fluid at lumbar punctures, within twelve to forty-eight hours after birth, in nine of the first series of one hundred consecutive newborn babies, in thirteen of the second, in ten of the third, and in seven in the last sixty-four cases; that is, in thirty-nine cases or 10+ per cent. Two babies died in the first series of one hundred consecutive cases—a ventricular hemorrhage in a seven months baby and a large supracortical hemorrhage in the other baby; one died in the last sixty-four cases of the fourth series of one hundred babies—an apparently normal child following an apparently normal labor, with lumbar puncture revealing bloody cerebral spinal fluid; the child suddenly dying fourteen hours after birth from respiratory failure and the autopsy disclosing a large supracortical hemorrhage, and yet no clinical signs of its presence until the respiratory complications. The amount of blood in these cases varied from merely a reddish tinge of cerebrospinal fluid to that of almost pure blood. The test of lumbar puncture itself in these newborn babies was simpler than the routine procedure of taking the blood, the essentials being a well flexed spine in the horizontal position, a hypodermic needle instead of the large, lumbar puncture needle and naturally no anesthesia. In only seventeen cases was the failure of a "dry tap" recorded. In each case, in which free blood was found in the cerebrospinal fluid and under varying degrees of increased pressure, as accurately recorded by the spinal mercurial manometer, the cerebrospinal fluid was slowly removed until the pressure descended to the lowest level within normal limits (4 mm.) and a second test twelve hours later was made, both to confirm the presence of blood of the first test and also to drain away still more of the free blood until the cerebrospinal fluid should become clear and under a pressure within normal limits (not over 8 mm.).

Clinical Signs. Of the thirty-nine cases having bloody and blood tinged (straw colored) cerebrospinal fluid, only twenty had had signs indicative of a possible intracranial hemorrhage, such as drowsiness, refusal or difficulty in nursing and occasionally slight muscular twitches of the orbital muscles or fingers; not one had a convulsive seizure. Repeated lumbar punctures of spinal drainage permitted the cerebrospinal fluid to become clear and under normal pressure in thirty-one of the cases, as many as nine tappings being necessary in one case. No doubt in the milder cases the natural means of absorption would have sufficed to "take care of" all of the free blood, but repeated lumbar punctures of spinal drainage certainly assure it in the mild cases and aid the complete absorption in the more severe cases. The modified subtemporal decompression of cranial drainage is only indicated in the extreme cases and after spinal drainage has failed.

The danger of lumbar puncture was in evidence in one case only in which the lumbar puncture was performed, the child being in an extreme condition of shock, and just as in adults having acute brain injuries, no extensive neurologic examinations should then be performed and by no means a lumbar puncture—the patient being in the condition of shock and all such extensive and prolonged examinations merely increases the shock.

The labor was apparently normal in twelve cases; prolonged in ten cases; low forceps in three cases and medium forceps in seven cases, out of thirty-five forcep applications; the delivery was a breech in seven cases. Not only is the traumatic rupture of the supracortical veins and the tributaries of the longitudinal sinuses a chief factor in the causation of the intracranial hemorrhage of the new born, but asphyxia, due to prolonged labor, complications of the cord and its surrounding the neck, is also an apparent etiologic factor.

Hemorrhagic disease of the newborn has been considered a common cause of intracranial hemorrhage in the newborn and yet in this series of thirty-nine cases of intracranial hemorrhage, in not one case was the coagulation time prolonged beyond the normal limits. These tests of the coagulability of the blood were taken within forty-eight hours after birth and it has been stated by several observers that the coagulation time of the blood only becomes lengthened after the third day of life. However, in the thirty-nine cases of intracranial hemorrhage of the newborn, later examination of the blood within two weeks after birth did not disclose a lengthened coagulation time. Only one case in the entire series of three hundred and sixty-four cases had a lengthened coagulation time and this child did not have blood in the cerebrospinal fluid.

Jaundice was associated with the condition of intracranial hemorrhage in seven of the thirty-nine cases, but in only two was the jaundice of the typical hepatic type, whereas, in the remaining five, it was merely an icteroid condition with no discoloration of the conjunctivae. Whether this latter is due to an hepatic complication or to an hemolytic complication in the absorption of the intracranial hemorrhage has as yet not been determined and apparently, up to the present time, there is no recognized accurate means to differentiate hepatic from hemolytic jaundice.

At first, the intracranial pressure, as registered by the spinal mercurial manometer within forty-eight hours after birth, was uniformly around seven to eight millimeters of mercury and we were beginning to feel that that degree of pressure was the normal for the newborn, in spite of the earlier belief that the intracranial pressure would be lower in the newborn than in the adults, on account of the open fontanels and the greater normal elasticity of the dura in them. However, upon the discharge of these babies two weeks after birth, a lumbar puncture revealed an intracranial pressure uniformly around three and four millimeters of mercury. Apparently there had been an acute cerebral edema of mild degree at the time of birth, either due to moulding of the head or to nature's protective mechanism of the brain, and this cerebral edema disappeared within ten days and two weeks after birth.

IMPRESSIONS

1. Intracranial hemorrhage of varying degree occurs much more frequently than has been conceived—cranial trauma and asphyxia during partruition being the chief factors; prolonged labor rather than the early application of low forceps being a mean cause.

2. Clinical signs of the presence of intracranial hemorrhage in the newborn are often lacking and not recognized. Drowsiness, refusal or difficulty in nursing and muscular twitches are most suggestive.

3. *Early* lumbar puncture, both as a diagnostic and as a therapeutic aid, is most essential in the rational treatment of the acute cases and in the preventive treatment of the possible future chronic cases of cerebral spastic paralysis with mental retardation.

20 West 50th Street.

Need New Laws on Adopting Children. That the laws of many states regarding the adoption of children should be radically changed is the opinion of C. V. Williams, superintendent of the Illinois Children's Home and Aid Society, in an article in the July **Hygeia**, entitled "Before You Adopt a Child."

Legal adoption of a child is one of the most important acts in which human beings can engage, Mr. Williams asserts, and in many courts it is performed in a perfunctory and casual manner.

"In spite of the fact that the child's actual parents are released from any further responsibility for his care and he is amalgamated into a new family for all time to come, these adoptions are frequently consummated with less form than is necessary to transfer real estate," declares the writer.

"Persons, concerning whom the court knows practically nothing, often have no difficulty in securing, thru adoption, the legal control of children of whom little is known. Some judges in adoption courts hold that it is not the prerogative of the court to gather evidence in these cases, and they act on the evidence as presented even tho it is lacking in details."

Because no intelligent and sober investigation is made, children may develop mental defects, or other inherited traits that will cause both family and child much suffering.

Mr. Williams believes that no legal adoptions should be allowed, except in most unusual circumstances, until the child has resided on trial with the family for a period of at least six months. Such laws are now in effect in Georgia, Ohio, Virginia, Michigan and Mnnesota.

BOTULISM IN OREGON *

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The toxin of the Clostridium botulinum is probably the most deadly known to man. The mere tasting of the poison has caused death in a number of cases. As small a dose as one millionth of a c.c. has been known to kill a 250 gram guinea pig. This toxin has in a number of outbreaks caused a mortality rate of one hundred per cent. It is indeed fortunate that the poison forms only under special and probably exacting conditions. This virulent poison is a true exotoxin, comparable in all respects to the toxins produced in cultures of diphtheria or tetanus bacilli. The botulinus toxin is the only one of the true bacterial toxins that is poisonous when taken by mouth. The Clostridium botulinum is an anaerobic obligate saprophyte. It probably does not grow or multiply in the animal body, but is harmful only thru the toxin which it produces by its growth in the food. There are known at present three types of C. botulinum, types A. B. and C. Botulism is caused by ingesting the toxin of C. botulinum.

Botulism is a rare disease, and the epidemic at Albany was the one hundred and thirty-second outbreak in the United States since 1899. The spores of the C. botulinum have been found in 31 per cent of the soils examined from Oregon, 80 per cent from Washington, and 29 per cent from California. The soils of the states of the southeastern part of the United States and Alaska are apparently free from the germ. It is found in the higher altitudes, and seems to follow the rivers and foothills. All of the samples of soil taken at Albany showed the presence of the spores of C. botulinum.

DIAGNOSIS

Botulism presents no particular distribution as to sex, age, season or social condition. The symptoms of botulism usually appear from eighteen to thirty-six hours after ingestion of the toxic food. The period of incubation probably depends on the amount and the virulence of the toxin ingested. The earliest symptoms are an indefinite feeling of weakness and dizziness. There is usually an initial nausea and vomiting, but in addition to this there is practically

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* Read before the Fiftieth Annual Meeting of Oregon State Medical Society, Portland, Ore., May 27-29, 1924. Epidemiology, F. D. Stricker, M.D., State Health Officer; Bacteriology, Wm. Levin, Dr.P.H., Director State Board of Health Laboratory; Pathology, R. L. Benson, M.D., University of Oregon Medical School

CHART 1
DIAGNOSIS OF BOTULISM

FOOD POISONING

	BOTULISM	FOOD INFECTIONS (Paratyphoid Groups)	TRICHINOSIS
Meal	Canned Foods Preserved Foods	Meat and Milk Products, Salads	Uncooked or Imperfectly Cooked Pork
Onset	12—24 Hours	Immediate 2—4 Hours	48 Hours or Later
Gastro-Intestinal	Initial Vomiting Burning in Throat	Continuous Vomiting	Late, or not at all
Constipation	Always	Purging	Continuous Diarrhea
Respiration	Labored, Difficult	No Disturbance	No Disturbance
Heart Beat	Often Slow	Rapid	Strong
Sensorium	Clear	Cloudy, Delirium, Sopor	Clear
Swallowing	Difficult	No Disturbance	No Disturbance
Disturbance of Vision	Dimness Frequent	Rare	Rare
Secretions	Inhibited	Increased	Normal or Increased
Pain	Very Little or no Pain	Abdominal Pain and Griping	Muscles of Neck and Back Painful on Movement
Temperature	Normal or Subnormal	102-103 Degrees F.	Evening Elevation
Duration	Long if Cured	Short 24—48 Hours	Many Weeks
Specific Test	Neutralization of Toxin by Antitoxin	Agglutination Tests	Demonstration of the Trichina Spiralis

DIAGNOSIS OF BOTULISM

BULBAR PARALYSIS

	ENCEPHALITIS	POLIOMYELITIS	BOTULSIM
1.	Febrile	Febrile	Afebrile
2.	Winter Season	Summer Season	All Seasons
3.	Many Adults	Few Adults	All Ages
4.	Double Vision, Early, Lasts 3—4 Days, Then Improvement	Vision Not Usually Affected	Dimness of Vision Throughout Attack
5.	Mental Confusion and Slight Delirium	Mental Confusion Usually Absent Except from Fever	Sensorium Clear
6.	Euphoria	No Euphoria	Very Apprehensive
7.	Improvement After 4—5 Days Followed by Increase of Symptoms	Steady Progress	Progressive Weakness
8.	Lethargy, 80 per cent	No Lethargy	No Lethargy
9.	Myoclonus at Times	No Myoclonus	No Myoclonus
10.	Cranial Nerve Palsies	Cold Symptoms, Palsies Arms and Legs	Motor Area not Usually Involved

no gastrointestinal disturbance. Constipation is a constant manifestation of botulism.

Disturbance of vision occurs early. Scintillation and dimness of vision progress sometimes to blindness. The third cranial nerve is early involved, causing ptosis, dilitation of pupils, loss of reflex to light and double vision. There is a weakness of the muscles of the neck, and the patient has difficulty in holding up the head. Patients complain of a difficulty of talking and swallowing. The mouth is dry and attacks of strangling occur. Thick, glairy, tenacious and stringy mucus lead to an ineffectual cough. The breath is offensive and fetid. Complete paralysis of peristalsis causes obstinate constipation. The abdomen is usually retracted. The progressive general weakness begins in the intestines, passes upwards, and gradually involves higher centers. The motor areas are hardly ever involved. There is an absence of sensory disturbances. Pulse is rapid and temperature subnormal. Increasing difficulty of breathing leads eventually to death due to paralysis of the respiratory centers.

The general appearance of the patient is distressing. The muscular weakness, the anxiety, the utter helplessness, the difficulty in swallowing, the attacks of strangling, the struggle for breath, all go to form a clinical picture which once seen can never be forgotten.

Five outbreaks have occurred in Oregon, and they are given in Chart 2. It will be noted that the Albany outbreak is one of the largest that has ever occurred in this country. Every person who ate at this meal suffered death from the virulent toxin that was present in a jar of string beans. The history of this outbreak is interesting, and from a preventive standpoint it emphasizes the fact that a great deal of care must be exercised in canning methods.

Thirty-one years ago Rheinhold Gerber and his wife, Emelia Yunker Gerber, and their daughter, Margaret, came from Germany to a small farm about

CHART 2

OUTBREAKS OF HUMAN BOTULISM IN OREGON

				Cases	Deaths
1.	Corn, Home Canned	October 1915	Hillsboro	1	1
2.	String Beans, Home Canned	December, 1917	Ontario	1	1
3.	String Beans, Home Canned	October, 1918	Klamath Falls	1	1
4.	String Beans, Home Canned	December, 1921	Grants Pass	1	1
5.	String Beans, Home Canned	February, 1924	Albany	12	12

The Albany Outbreak was the 132d in the United States.

FOUR OF THE LARGEST OUTBREAKS OF BOTULISM

1.	Beets, Commercially Canned	May, 1919	Dawson City, Alaska	23	12
2.	String Beans, Home Canned	February, 1924	Albany, Ore.	12	12
3.	Pears, Home Canned	June, 1910	Sawtelle, Calif.	12	11
4.	Ripe Olives, Commercially Canned	February, 1920	Memphis, Tenn.	7	7

CHART 3

BOTULISM OUTBREAK AT ALBONY

FEBRUARY 2, 1924

TIME OF ONSET AND DURATION OF ILLNESS

	Name of Patient	Age	Amount of Bean Salad Eaten	Onset (Hours)	Duration (Hours)	Death (Time from Eating Meal) (Hours)
1.	Marie Gerbig	6 years	Freely	17	10	27
2.	Hilda Gerbig	9½ years	Freely	17	13	30
3.	Paula Ruhling (Mrs.)	23 years	Freely	18	18	36
4.	Margaret Gerbig (Mrs.)	35 years	Freely	24	15	39
5.	Curt Ruhling	25 years	Freely	27	27	54
6.	Hans Yunker	12 years	Taste	40	16	56
7.	Esther Gerbig	1¾ years	Taste	37	23	60
8.	Rheinhold Gerber	76 years	Freely	20	52	72
9.	Emelia Gerber	62 years	Sparingly	24	67	91
10.	Margaret Gerbig	3 years	Sparingly	40	52	92
11.	Paul Gerbig	31 years	Freely	30	63	93
12.	Horst Ruhling	1½ years	Taste	116	72	188

eleven miles from Albany, on the Santiam river. Mrs. Gerber was a very active and industrious woman, and was well known in Albany, having peddled vegetables there for many years. By hard work and saving she accumulated a comfortable income. In the spirit of economy she had formed the habit of canning everything that was canable, and at the time of her death she had from two to three hundred jars of every variety of canned fruit, vegetables, meat and fish. She used the cold-pack method. That is, she placed the washed food in jars and submerged these jars in water, boiling them for three hours.

Her daughter married Paul Gerbig, and they had four children. Several years ago the old people moved to the city of Albany, leaving the young people to run the farm. At the time of the tragedy the two oldest children of Paul Gerbig were living with their grandparents while attending school in Albany. Mrs. Gerber still continued to run a garden on the city lots, and had canned products from the same until two years ago. Undoubtedly her methods of canning were not as good as they were in years gone by, and the probabilities are that she was not as careful in the selection, cleaning, and preparation of the vegetables.

Paul Gerbig continued to run the farm and in addition to this farm had purchased an additional farm. He found that the work had increased to such an extent that he was unable to handle it. His sister wrote him from Germany that she and her family were having a difficult time to make a living on account of the disturbed financial conditions of that country. He, therefore, sent his sister sufficient funds for herself, her husband and baby, Horst, to come to this country. They had been in this country just one month at the time of the tragedy. Curt Ruhling, the brother-in-law, was a farmer. He had served in the German army thru the war, and was going to assist Paul Gerbig in running the two farms.

On Saturday, February 2, 1924, they had all assembled at the home of the old people, Mr. and Mrs. Gerber, at Albany. In addition to the Gerbig and Ruhling families, there was also present Hans Yunker, the twelve year old son of Mrs. Gerber's brother, who lived on a farm near Thomas. They all sat down to the fatal meal Saturday noon. This was the only meal they had all eaten together during the week. The meal consisted of some fried canned liver sausage and canned pork, potatoes, bread, string bean salad, coffee and fresh milk. The string beans were served at the request of Mrs. Paula Ruhling, who had relished a similar dish on a former occasion. The only objection that was raised was on the part of Hans Yunker, who said that the beans did not taste good, and who, after tasting them, refused to eat them. Paul Gerbig and the elder Gerber stated that the beans were "woody." The beans were served cold with vinegar, cream and sugar. Mrs. Gerber stated that they were canned several years previous, and that this jar was the last of the lot. There were, however, seven more jars of string beans discovered after her death. The contents of three of these seven jars were found to be extremely toxic. There was a history of at least three occasions on which the chickens died from eating something that had been thrown out. On these occasions the spoilage was noted and the family escaped poisoning. One of the occasions was at the Gerbig farm.

Paul Gerbig, his wife and the younger two children, together with Curt Ruhling, his wife and baby, Horst, returned Saturday afternoon to the farm eleven miles from Albany. Hans Yunker also returned with his parents to Thomas. Saturday evening the grandmother complained of not feeling well. Sunday morning the two children, Hilda and Marie, were taken with vomiting and a burning sensation in the mouth and throat. They grew rapidly worse, with labored breathing and difficult swallowing, and died, one at three, and the other at six p. m. Paul Gerbig, the father, was called from the farm and nursed them until their death. While nursing his two oldest children a telephone call summoned him back to his home where his wife and children were reported to be seriously ill. On returning to his home he found not only his wife, but also Curt and Paula Ruhling seriously ill. Paula Ruhling died late Sunday evening. Margaret Gerbig, the mother, died Monday morning at 3 a. m. Curt Ruhling died at 6 p. m. Monday, and Esther Gerbig died Monday evening at 8 o'clock. Margaret Gerbig, the three year old, seemed to be recovering from the attack and ate an apple. She then became worse and died Wednesday morning.

Although a very sick man himself, Paul Gerbig continued to assist in nursing the others up to Tuesday evening, when he was forced to give up himself. He grew rapidly and progressively weaker, and died Wednesday at 9 a. m.

Hans Yunker, the son of Mrs. Gerber's brother who lived near Thomas, fainted while his father was cutting his hair Sunday morning. Monday he grew rapidly worse, and died that evening. The grandfather, Rheinhold Gerber, became sick Sunday evening and died early Tuesday morning. The grandmother, Emelia Gerber, altho quite sick herself, assisted in nursing the rest of the family until they had all passed away. She persistently refused to lie down, and finally died Wednesday morning.

It was hoped that Horst Ruhling, the nursing baby, would survive. This child, however, refused to take nourishment and it was supposed that this condition was due to a change of food. About the fifth day, however, the characteristic symptoms of botulism appeared, and he was given a dose of polyvalent botulinus antitoxin. The serum had practically no effect upon the poison, which was undoubtedly fixed at that time. He grew slowly and progressively worse, and finally died, Sunday morning, the 10th.

We will now consider the cases individually *.

Case 1. Marie Gerbig was born near Albany, Ore., six years old, and was a granddaughter of Mr. and Mrs. Rheinhold Gerber. She and her sister were living in Albany while attending public school. She ate a regular portion of the bean salad at the noonday meal of Saturday, Feb. 2, 1924. About five the next morning she vomited and complained of a burning sensation in the mouth and throat. Tongue thick, and voice husky. There was absolute constipation. Abdomen retracted. The pupils were dilated. There was no apparent paralysis, but a general progressive weakness was noted. Breathing became gradually more difficult. On attempting to swallow there was strangulation, and it was almost impossible to dislodge the thick, glairy and stringy mucus. The patient was restless and apprehensive. She was conscious until death, which occurred at 3 p. m., Sunday afternoon. The treatment consisted of laxatives and alkalies. Death was due to a paralysis of respiration. No autopsy was held.

Case 2. Hilda Gerbig, a sister of Marie, 9 years of age, was born near Albany, and was living with her grandparents while attending the public schools in Albany. She ate a small amount of the string bean salad at the noonday meal of Feb. 2. She became sick about the same time as her sister, with vomiting and a burning sensation in the mouth and throat. There was absolute constipation. There was restlessness and a general progressive weakness. The breathing was difficult. Breath was fetid. There was a continuous effort to dislodge the thick, stringy, glairy mucus with paroxysmal swallowing and strangling. The tongue was thick and the voice became husky. She died Sunday evening at 6 p. m. Treatment consisted of laxatives and alkalies. No autopsy was held.

Case 3. Paula Ruhling, age 23 years, born in Germany, a sister of Paul Gerbig. She, her husband, Curt Ruhling, and her baby, Horst Ruhling, left Germany one month previous on account of the poor living conditions. They lived with the Gerbigs. They had dined at the Gerber home before, and previous to the noon meal of Saturday, Feb. 2, on being asked what she would prefer, said "Grandma, please give us some more of those good string beans." She ate very freely of the bean salad. After the meal she and her husband and the baby returned with the Gerbig family to the farm some eleven miles from Albany. About Sunday noon she vomited and complained of dizziness. There was coldness of extremities. There was a progressive general weakness. The respiration was labored. Patient was restless and apprehensive. Swallowing was difficult with paroxysmal spells of strangling. A thick, glairy, stringy mucus increased the difficulty of breathing and swallowing. Patient could not hold up her head. Pulse 120. Temperature normal. She remained conscious until the end and died at 11:55, Sunday evening, from paralysis of respiration. Autopsy showed all tissues normal, except a slight congestion of base of lungs. Patient was a beautiful specimen of normal development.

Case 4. Mrs. Margaret Gerbig, age 35 years, born in Germany, the daughter of Mr. and Mrs. Rheinhold Gerber, and the mother of the four Gerbig children. She and her family lived on a farm eleven miles northeast of Albany. She ate freely of the bean salad served at the noonday meal of Saturday, Feb. 2. She was taken with vomiting twenty-four hours after the fatal meal. There was a burning sensation in the throat. Breathing was labored. Dimness of vision. Chilliness. Weakness was progressive. There was difficulty of swallowing, with paroxysms of strangling. A thick, glairy, stringy, mucus interfered with respiration and swallowing. There was a paroxysmal cough, tongue was thick and speech was husky. Patient complained of dimness of vision, and there was a distinct squint. Patient was conscious until death. She died at 3 a. m. Monday. Treatment consisted of cathartics and alkalies. No postmortem examination was held.

Case 5. Curt Ruhling was 25 years old, born in Germany, and a farmer by occupation. He was the husband of Paula Ruhling, a brother-in-law of Margaret Gerbig, and the father of Horst Ruhling. He had been in this country one month, leaving Germany on account of the poor living conditions. He ate freely of the bean salad at the noonday meal on Feb. 2. He became ill about noon the next day; the initial symptoms were vomiting and burning in the throat. There was a rapid progressive weakness. Difficult respiration, and accumulation of thick, glairy mucus made swallowing extremely difficult. There was extreme apprehensiveness but practically no pain. Patient was conscious until death. Constipation was absolute. Pulse 60. Complained of coldness of extremities. Died Monday, at 6 p. m. The treatment consisted of 2 oz. of castor oil, 18 drops of croton oil, and alkalies. No results from cathartic. No autopsy was held.

Case 6. Hans Yunker was 12 years and 4 months old. He was born in Albany. His father was a

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* Clinical histories of these cases obtained thru courtesy of Drs. B. R. Wallace and J. P. Wallace of Albany and A. G. Pritt of Scio.

brother of Emelia Gerber, the grandmother of the Gerbig children. Hans was visiting in Albany, and tasted the bean salad. He said that they did not taste good. He was taken sick Monday morning. There was a loss of motion in arms and legs, but no paralysis. Scintillation and dimness of vision was noted early. Pulse and heart normal. Kidneys normal, respiration labored, enema very offensive. There was a nervous restlessness. Strangulation and inability to sustain even water. Complained of choking and inability to breathe. Pulse 90. Slight convulsion, which lasted not over thirty seconds. Mind clear up to the convulsion. Died Monday evening at 8, at his home near Thomas. No autopsy.

Case 7. Esther Gerbig, age 1 yr. 9 mo., born on farm eleven miles from Albany. She was the youngest child of Paul Gerbig. The child was still being nursed by her mother. The mother stated that she had given the child a half teaspoon of the juice of the string bean salad. She became ill Sunday evening and died twenty-four hours later. The onset commenced with vomiting. Progressive general weakness. Labored breathing and difficulty in swallowing. Frequent fits of strangling and inability to dislodge the thick, glairy mucus. Unconscious eight hours before death. She died Monday evening at 8. Treatment, castor oil. No autopsy was held.

Case 8. Rheinhold Gerber, the grandfather, was 76 years old. He was born in Germany and came to Albany thirty-one years ago. He was a farmer by occupation, but never was very active, his wife practically handling all of the business. He ate a regular portion of the string bean salad at the noonday meal on Saturday, Feb. 2. He vomited twenty-four hours later, and complained of dizziness and weakness. There was a slight movement of the bowels Sunday morning after having been given a cathartic, and this was followed by constipation. There was dimness of vision, a slight internal strabismus, photophobia and blepharoptosis. The eye reacted sluggishly to light and distance. Pulse 98. Respiration 22. He was restless and frequently apprehensive. There was a paroxysmal cough which, with the accumulation of a thick, glairy mucus, brought on strangling spells. There was progressive weakness. The patient was conscious until the last. He died early Tuesday morning, Feb. 5. Treatment consisted of cathartic and alkalies. No autopsy was held.

Case 9. Emelia Gerber, age 62 years, was born in Germany, but had lived in or near Albany for the last thirty-one years. She was the grandmother at whose home the fatal dinner of Feb. 2 was eaten. She had always led a very active life and for a number of years had peddled vegetables thruout the city of Albany. In this way she had saved a comfortable sum. There seemed to be some doubt as to just what her opinion of the string beans might have been. It was reported that she had said that they were not quite right, but after adding a little cream and vinegar she thought they were fit to serve. On questioning her, however, she said that she did not like beans, and only tasted them and did not notice anything particularly wrong with them, except that they were a little darker in color. She ate one teaspoonful of the beans, and said they had no taste. She added that her disease was similar to that of some hens that died some four or five years ago after eating something she had thrown away. She spoke of the hens' heads drooping down, and they probably died of limberneck, or botulism. She said the chickens were unable, the same as she was, to dislodge the thick, stringy mucus from their throats. An attempt was made to get a sample of the beans eaten at the meal, but she stated that they had all been eaten and the jar washed. She also stated that this jar was the last of a batch she had canned several years ago.

After her death a careful search was made of the premises and five jars of beans were found. There was some difficulty in discovering them, as the old lady kept her canned goods all over the house. Most of the jars were left in a moist, dark, musty, closet together with a lot of cast-off clothing. In this lot there were many jars that were in various stages of decomposition. Jars of preserved foods were found upstairs under a bed, and also in a dark corner of the woodshed. Mrs. Gerber stated that the meal had consisted of fried canned liver sausage, and canned pork, potatoes, bread, and a bean salad, to which had been added some vinegar. She claimed that she had just purchased the vinegar and suggested that this might have contained the poison. A careful examination of the vinegar used proved it to be nontoxic.

Mrs. Gerber said she did not feel well the evening following the meal. She was nauseated, vomited, and there was a slight purging. This was followed by obstinate constipation. Patient was extremely restless, would not lie down, and was very apprehensive. The breath was offensive, a spoiled-cheese odor of acidosis. She complained of burning in her throat and stomach. There was internal strabismus, photophobia, sluggish reaction to light, pupils dilated, dimness of vision. Face was slightly swollen and the conjuctiva was congested. Respiration was labored. Tongue was thick. Difficult swallowing and strangling took place when any food or liquid was taken. A thick, glairy mucus was removed with difficulty. Speech was difficult and husky. Pulse weak and 130. Respiration 18. Was up and walking around a few hours before death. Patient was conscious until the last. Death was due to respiratory failure. She died Wednesday morning. The treatment consisted of alkalies and laxatives. Bromides seemed to relieve. No autopsy was held.

Case 10. Margaret Gerbig, age 3 years, born near Albany, daughter of Paul and Margaret Gerbig. She ate a small portion of the string bean salad and was up and around all day Sunday, but vomited about 4 a. m., Monday morning. Her eyes were congested and there was a certain amount of photophobia. The constipation was complete and castor oil was ineffective. The breath was the usual odor of fetid spoiled cheese. The breathing grew gradually more labored. Swallowing was difficult and the thick, glairy mucus produced a strangling effect. She seemed better for a few hours before death, and ate an apple. After this the symptoms grew immediately worse, and she died Wednesday morning at 8 a. m. Treatment, laxatives and alkalies. No autopsy held.

Case 11. Paul Gerbig, 31 years old, born in Germany, the husband of Margaret Gerbig, and son-in-law of Mr. and Mrs. Rheinhold Gerber. He lived about eleven miles northeast of Albany. He was a farmer by occupation. He, his wife, and four children ate the noonday meal at the grandmother's. After the meal they returned to the farm, taking the two younger children with them. The two older children lived with the grandparents while going to school. On Sunday morning they called him, saying that the children were quite ill. He immediately drove to Albany and stayed with the children until they died. About this time they telephoned from the farm that his wife and one of the children were sick. He drove back to the farm, and stated that he had some difficulty in keeping to the road, especially in crossing the bridges. On his return he found not only his wife and baby sick, but also Curt Ruhling and his wife desperately ill. He nursed them all until they died.

Paul Gerbig, altho himself very ill, was active until the death of his youngest child Monday evening. He vomited and complained of a burning in his throat and stomach. He became progressively weaker with labored respiration and difficult swallowing. There were strangling spells in which he tried to dislodge the thick, glairy, stringy mucus. He was conscious to the last. He died Wednesday, at 9 a. m. The treatment consisted of calomel 2 grs., 4 oz. of castor oil, and 4 drops of croton oil. There was some purging followed by absolute constipation. An autopsy was performed by Dr. B. R. Wallace. There were a number of abnormalities of a chronic nature, but no acute lesions, except a slight congestion, were noted. Contents of stomach and intestines had a spoiled-cheese fetid odor.

Case 12. Horst Ruhling, age 18 months, nursing child of Paula Ruhling. This child was still fed at the mother's breast and it was at first supposed that at least this infant would escape death from botulism. But after a careful investigation of the case it was found that the grandmother had given the baby some of the juice in a spoon. Before this fact was discovered, however, it was said that the child had taken the toxin from the mother thru nursing. According to the best authorities the poison is not eliminated, but becomes fixed in the tissues. The onset of this case is not certain, but abnormal symptoms were noticed about the fifth day, such as vomiting and lack of appetite. This case grew progressively weaker, and died on the eighth day following the fatal meal, death occurring Sunday morning, the 10th. Treatment: Patient was given laxatives and alkalies. One dose of polyvalent antitoxin was also given with practically no benefit. An autopsy was performed by Dr. Hunter, of Dr. Benson's laboratory. The record is given in full.

AUTOPSY

Accession No. 10252.
Name—Horst Ruhling.
Date—February 10, 1924.
Date of Death—February 10, 1924.
Necropsy by Warren C. Hunter, at Fisher-Braden Undertaking Co., Albany, Oregon. 2-10-24 at 11:15 p. m.
History—Dr. B. R. Wallace; Coroner Fisher of Linn County. Dr. B. R. Wallace, Dr. Frederick Stricker and Coroner Fisher present.
Clinical Diagnosis—This child was the twelfth death (and the last of families) from botulinus poisoning due to eating home canned beans put up by the cold-pack method. Death occurred seven and one-half days after eating the food.
Anatomic Diagnosis—Botulinus poisoning, marked active hyperemia of brain and spinal cord, hypostatic congestion of the lungs, early bronchopneumonia—right, hypoplasis of adrenals, small subcapsular cyst of the liver, thick tenacious mucus in trachea and main bronchi.

No. 10252. This is the body of a rather poorly nourished white male child, 18 months of age. The scalp hair is light; the head is rounded. The eyes are blue; the pupils are equal and are not dilated. The skin of the face is fair and soft. There is no evidence of injury or disease about the external auditory or nasal meati or about the mouth. The chest is symmetrical. The abdomen is on a level with the thorax. It has been trochared. There are no noteworthy changes about the external genitalia; the testicles are in the scrotum. The soles of the feet are calloused. The body is unembalmed except for trocharing in the abdomen. Body heat is absent, rigor mortis is slight; posterior lividity is almost absent.

The subcutaneous fat in the usual midline incision of the trunk in front is scanty and pale. The skeletal musculature is rather poorly developed. The peritoneum is smooth and shining. The peritoneum of the bowel is greyish from formalin fixation; the bowel has been trochared in many places. The lymph nodes in the root of the mesentery are large. The great omentum is thin and membrane-like. The sigmoid is long and redundant. The appendix is long and kinked upon itself at its middle; otherwise it is normal. The urinary bladder contains a small amount of light amber-colored urine. The solitary lymph follicles in the cecum and colon are large and discrete. The mucosa appears to be intact. The same is true of the small bowel. The liver and spleen are not enlarged. The stomach is empty. There are no abnormalities of development or position of any of the viscera of the abdominal cavity.

The thymus is of average normal size for a child of this age and is normal in appearance. Both lungs are free in their pleural cavities. Anteriorly both are well aerated. posteriorly both are dark and firm; on sectioning marked hypostatic congestion is found. In the right lung one or two small consolidations are found about the bronchi. The trachea contains thick tenacious mucus. The heart is slightly dilated, especially the right chambers; otherwise it is in all respects normal. The mucosa of the esophagus is intact; there are no noteworthy changes in the mucosa of the stomach. The superior and inferior vena cavae, the portal vein and its tributaries, the aorta, are all negative. The suprarenal glands are thin, flattened, and both cortex and medulla are diminished; there is little yellow material in the cortex. The surfaces made by sectioning the kidneys disclose no noteworthy changes. The spleen is normal in size and gross appearance. The pancreas is negative. The surfaces made by sectioning the liver are negative except for a small subcapsular cyst filled with glairy mucus-like fluid.

When the spinal cord is removed and the dura reflected, the blood vessels are found to be engorged. The sutures of the skull are closed; there are no noteworthy changes in the bones of the calvarium. The dura is negative. The blood vessels in the pia-arachnoid over the entire brain are engorged. This is equally true of both vertex and base. On sectioning, the capillaries in the brain substance are found to be engorged also. Otherwise no changes are observed; there is no edema or exudate beneath the meninges.

SUMMARY OF PATHOLOGY

The pathologic data furnished by this epidemic will necessarily be meager, owing to the fact that no pathologist saw the earlier cases, and that only three autopsies were done in all. In only two cases was the brain removed for examination, and in only one the spinal cord.

The brain was hyperemic in both cases in which this organ was removed. The cord removed from one case was also noticeably hyperemic. Hypostatic congestion of the lungs was present in the three cases which came to autopsy. The spleen, kidneys and other viscera were likewise hyperemic. In one case early bronchopneumonia was noted. In general it can be said that the gross findings were not in any sense pathognomonic of botulism.

The microscopic findings can best be considered by individual cases, mentioning only those tissues which display noteworthy abnormalities.

Case 3. There is extreme hypostatic congestion of the lungs, with small areas of pseudolobar pneumonia. The smaller bronchi are tightly contracted, throwing the mucosa into folds, and the peribronchial blood vessels are greatly engorged. One vein 3 mm. in diameter in a lung section is occluded by a recent antemortem thrombus.

The spleen is extremely hyperemic.

The interstitial connective tissue of the myocardium has undergone considerable mucoid degeneration.

There is a moderate degree of fatty change in the liver, with fine droplets.

Case 11. There is considerable hyperemia of the brain, and meninges, veins, arteries and capillaries are dilated. No thrombi are observable, nor any perivascular infiltration. No changes are noted in the ganglion cells.

The lung sections give evidence of an extreme degree of hypostatic edema and hyperemia, with areas of diffuse hemorrhage.

There is extreme passive hyperemia of the spleen. Kidney sections display a moderate grade of parenchymatous degeneration and considerable hyperemia. The liver parenchyma has undergone fatty change with fine droplets.

Case 12. Examination of sections from various parts of the brain reveals marked hyperemia of both brain and meninges, but no other changes.

There is hypostatic congestion and edema of lungs, with areas of bronchopneumonia, also infiltration of the tissue about the smaller bronchi by lymphoid cells.

The thymus is hyperemic. The myocardium manifests no noteworthy abnormalities. The spleen is moderately hyperemic. There is hyperemia of the kidneys, with considerable blood pigment deposit in the interstitial tissue. The liver parenchyma is the seat of an extreme fatty change with medium-sized droplets involving the entire lobule.

In summarizing, it may be said that hyperemia of the brain and cord appears to be characteristic. The lungs are always hyperemic, sometimes edematous, and early bronchopneumonia is present. Hyperemia of other viscera is the usual finding. In only one case were thrombi found in vessels, and in this case the lung formed the site. Parenchymatous degeneration of the kidneys was found in one case. Fatty changes were found in the liver in two of the three cases, and were extreme in one case.

BACTERIOLOGIC FINDINGS

Of the various articles eaten at the Saturday noon meal the home canned string beans and the home canned liver sausage were the foods most strongly suspected of having been the causative agents of the poisoning. Unfortunately all of the beans had been eaten and the jar was washed and misplaced, so none of the material was available for laboratory examination. Mrs. Gerber, who had prepared the meal, was emphatic in her belief that the vinegar she had used was responsible for the poisoning. Samples of the vinegar, a jar of home-canned liver sausage, and a can containing the remnants of commercially canned peas (thought to have been eaten at the same meal) were taken to the laboratory for examination. After Mrs. Gerber's death a search of the house resulted in finding three quart jars of string beans along with numerous other home canned foods. A subsequent inspection of the house resulted in the finding of two more jars. About three months after the tragedy two more quart jars of string beans were obtained from Mr. Otto Yunker, the brother of Mrs. Gerber, who had found them in her house. In all, therefore, seven quart jars of home canned string beans were recovered.

Tests made on the vinegar, peas and the liver sausage were all negative for pathogenes. Clostridium botulinum was recovered from three of the seven jars of string beans.

External appearance indicated spoilage in but three of the seven jars, altho in all the beans were rather dark and off color. The method of canning. in part, undoubtedly was responsible for the off color, since no water had been added to the beans. Then, again, some of the beans must have been fairly ripe when canned, as they were rather tough when cut. One of the jars was visibly spoiled, but had no Clostridium botulinum present. The following table indicates the findings made on the seven jars of string beans recovered from the Gerber home:

LABORATORY FINDINGS ON SUSPECTED STRING BEANS

Lab. Spec. No.	Odor	Visible Spoilage	pH (Juice)	Cl. Bot.
1120	Markedly putrescent	Marked Sediment	6.5	+
1121	Markedly putrescent	None	6.5	+
1122	Faintly sour	None	6.7	—
1325	Markedly putrescent	Mouldy	6.8	+
1326	None	None	6.5	—
3722	Musty	Mouldy	5.3	—
3723	None	None	5.6	—

One of the jars, number 1120, was opened on Feb. 7. There was a very marked escape of gas. There was a strong, putrid, pungent odor, as of a mixture of acetic and butyric acids. This odor was present in all three of the jars in which the Cl. botulinum was demonstrated, and was absent in the other four. Whether there was an odor to the beans which had been eaten cannot definitely be stated. It seems highly improbable that anyone would eat beans having such a marked disagreeable odor as that found in the jars later proven to be toxic. The vinegar, used as a dressing, may have disguised the odor somewhat, and the taste considerably. Other workers, notably Rosenau and Geiger, state that in certain outbreaks odor was absent in several specimens of home canned string beans, in which the Cl. botulinum toxin was demonstrated.

Bronfenbrenner and Schlesinger state that the potency of the botulinus toxin is increased many times by even slight acidification. This is denied by Geiger. To what extent, if any, the vinegar contributed to the increase of the toxicity of the beans it is difficult to state. The toxin was extremely virulent, the lethal dose for a 100 gram guinea pig being between 1 c.c. of 1-10,000 and 1 c.c. of 1-100,000 dilutions of the bean juice. Assuming that the human is equally responsive to the toxic action of the botulinus poison, one drop of the bean juice should have been sufficient to kill a person weighing about one hundred and twenty-five pounds.

At 10 p. m. on February 7, a 450 gm. guinea pig was injected intraperitoneally with 1.0 c.c. of the bean juice, laboratory number 1120. He was found dead on the morning of the 8th. The Cl. botulinum was subsequently recovered from the spleen.

On Feb. 8, a guinea pig (690 gm.) was given subcutaneously, 2 c.c., containing 100 units of polyvalent botulinus antitoxin (manufactured by the Jensen - Salsbery Laboratories, Inc., Kansas City, Mo.), and three hours later was injected with 1.0 c.c. of the bean juice. A control pig (720 gm.), was injected at the same time with 0.5 c.c. of the bean juice. The control pig died early in the night. The immunized pig was unaffected in any way.

On Feb. 9, a hen weighing 4 lbs., was given 100 units of the polyvalent antitoxin, and an hour later was injected subcutaneously with 2.0 c.c. of the bean juice No. 1120. A control hen, 2½ lbs., was injected at the same time with 0.5 c.c. of the juice. The control hen died over night. The immunized hen was in no way affected. She subsequently became an excellent layer.

On Feb. 11, a 2½ lb. hen was injected with 0.5 c.c. of a 1/100 dilution of a supernatant 24 hrs. culture of Clostridium botulinum. This was the culture recovered from the spleen of the guinea pig injected on Feb. 7. The onset of the symptoms was gradual, as shown in the following history:

Feb. 11: Injected subcutaneously, at 4:25 p. m. with 0.5 c.c. of 1/100 culture.

Feb. 12: At 4 p. m. the comb seemed to roll over, and it had lost somewhat of its natural color. No other symptoms visible.

Feb. 13: The hen was not steady on her legs and refused to eat. At 9:30 a. m. there was the first sign of "limberneck." Thruout the day the hen attempted to stand up, but was unable to do so except for very short periods. Her comb and wattles had turned bluish.

Feb. 14: The hen was comatose. There was complete "limberneck," the hen being unable to raise her head. At 12 a. m. she was given 250 units of polyvalent antitoxin, and 300 more units three hours later.

Feb. 15: The hen was comatose.

Feb. 16: Death occurred early in the morning.

Undoubtedly the antitoxin was responsible for the delay in death. The use of antitoxin in cases of human botulism has not been attended by the remarkable results obtained in the other diseases responsive to antitoxin. As a rule the antitoxin is administered too long after the consumption of the toxic food for it to be efficacious. There is also evidence to indicate that the botulinus toxin is much more firmly bound to the body cells than either the tetanus or diphtheria toxin. Only one of the cases, Horst Ruhling, received antitoxin, but without any beneficial results.

Material for culture was obtained from two autopsies. The stomach and intestinal contents, the liver, lungs, and spleen were obtained from Mrs. Paul Ruhling. The cadaver had already been embalmed previous to the autopsy, hence the cultures from the liver, lung and spleen were sterile. The usual bacterial flora were found in the cultures of the stomach and intestinal contents. From Paul Gerbig were obtained the brain, spleen, stomach contents and intestinal contents. From the spleen alone was recovered the Clostridium botulinum, which on typing was found to be of type A.

Five one-gram samples of the soil of the garden at Albany, whereon the beans had been grown, were heated at 100° C. for thirty minutes and planted in beef heart digest medium. This medium, made according to the method of Robertson, with a reaction of pH 7.2 was used in the preparation of all the toxins for typing. One-half to one inch of sterile white vaseline was laid over the culture medium, and the whole incubated at 37° C. Excellent growth was obtained in every case. The Clostridium botulinum was also demonstrated on the soil of the Gerbig farm, eleven miles from Albany. In five out of six specimens the organism was found in as small amount of soil as 0.1 gram, while it was present in all one-gram samples.

As already stated, an epidemic of "limberneck" was reported to have occurred on this farm about a year ago. Clostridium botulinum could not be demonstrated in any of sixteen jars of home canned string beans found on the Gerbig farm, which had been packed according to the method employed by Mrs. Gerber. It is interesting to note that one of the jars yielded a pure culture of B. subtilis.

For the typing of the toxins, type A. antitoxin alone was available. This was kindly furnished by Dr. J. C. Geiger, of the United States Public Health Service, who also assisted in the final tests. Five day old cultures of the Clostridium botulinum isolated from the various jars of string beans, soil specimens and human spleen were centrifugalized until a clear supernatant was obtained. This supernatant fluid contained the botulinus toxin. 0.25 c.c. of the toxin mixed with 0.5 c.c. of antitoxin, type A. (200 units), was injected subcutaneously in a 100 to 125 gm. guinea pig, while at the same time a control pig was injected with 0.25 c.c. of the toxin alone. In every case the control pig died, while those receiving the type A. antitoxin were protected.

Immunologic tests, therefore, proved: (a) the Cl. botulinum present in the soil was of type A; (b) the Cl. botulinum found in the string beans was of type

A; (c) the Cl. botulinum isolated from the spleen of Paul Gerbig was of type A. The outbreak of botulism was, therefore, caused by the Cl. botulinum, type A.

PREVENTION

It was originally thought that the Clostridium botulinum would grow only in sausage or meat. The European outbreaks have involved mainly meats, sausage, ham, turkey, beef, chicken and fish. In this country other foods have been involved, such as string beans, cottage cheese, corn, spinach and ripe olives.

Marked improvement of canning methods, insuring complete sterilization at 240° F. under pressure of preserved foods, has almost eliminated botulism from commercial canning. In home canning pressure cookers are essential to safe canning. All vegetables, such as string beans, corn, spinach, etc., canned at water bath temperature, should be boiled at least 25 or 30 minutes before serving. This temperature will destroy the toxin. No food should be used which shows any evidence of spoilage, and canned goods which are suspicious should never be tasted to determine whether they are spoiled or not.

TREATMENT

Antitoxin should be administered as soon as possible after the consumption of the toxic food. Polyvalent serum will save time, and should be given intravenously. The dose must be sufficiently large to neutralize the toxin. Patients susceptible to horse serum should be desensitized. Geiger recommends immobilization and quiet. Edmunds believes that artificial respiration and the administration of physostigmina are valuable. High enemas containing liquid soap, olive oil or turpentine may be used to an advantage. Strychnine has been used in most cases.

Marriage of First Cousins in Direct Line of Descen Thru Four Generations. The family described by Douglas P. Murphy, Rutherfordton, N. C. (Jour. A. M. A., July 5, 1924), is of interest for several reasons: The large number of marriages between first cousins; the fact that four of these occurred in direct line of descent, and the striking lack of mental and physical deterioration as a result of such constant intermarriage. In the family tree represented, seven marriages took place between first cousins. Four of these were in direct line of descent. The second in direct line was a marriage of double first cousins. No physical abnormalities could be found in the entire family. Only one case of mental deviation, of mild type, was present, early in the family tree. The only pathologic finding possibly the result of inbreeding, was the high infant mortality. This mortality was highest in the families in which the relationship of the ancestors was closest.

SURGERY FORTY-FIVE YEARS AGO AND NOW*

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This paper must not be taken as historical. It is merely reminiscent and no attempt will be made to give exact dates or data. I began the practice of medicine in the fall of 1878, so the range of my personal experience covers the full forty-five years, about which I am to speak.

I do not claim to be specially qualified to speak on a surgical subject, never having posed as a specialist in surgery. In fact, I think I had a rather unique experience in my student and early years of practice in that I had no ambition to be a surgeon. If I had a clearly defined ambition those days it was to attain to my ideal of what a general practitioner ought to be. In striving toward that ideal I found myself more and more doing surgery, so finally came to do more in that line than the average general practitioner.

Absence of a definite surgical ambition perhaps kept me from intimate contact with the surgeons and surgery of my college days. It must be borne in mind that there was relatively little surgery done in those days. We would probably see ten times as many medical cases as surgical. I did not see, during my student days, a single laporatomy. I never so much as heard of appendicitis. A few appendiceal abscesses were opened, tho they were all called perityphliti cabscess. inflammation in the appendix region being always spoken of by surgeons, as well as physicians, as perityphlitis. Amputation of legs and arms provided the great mass of major surgery. No wonder surgery occupied a secondary position to medicine in those days.

I have thought it might be interesting and even profitable to notice the changes which forty-five years have wrought, first, in the surgeon himself; second, the change in surgery itself, the science and art which the surgeon practices; third, the changes that have taken place in his appliances, facilities and mechanical equipment, the things with which the surgeon works and that serve as helps to him both in and out of the operating room.

(1) It is safe to say that no very marked change has actually taken place in the capacity or mental make up of any given group of men in forty-five years. It is a grave question whether there has been any very marked change in the capacity or mental make up of mankind in general in forty-five hun-

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dred years, for that matter. Yet, as I remember the surgeon of my earlier years, he had certain peculiar characteristics that probably were a result of his experiences and environment. Even tho at times a little inclined to display his skill, he had to be deft, quick and skillful to get results in the face of the unsanitary conditions under which he worked.

Due to the impress of preanesthetic days the surgeon was, as I met him, bluff and aggressive personally, and set much store by his ability to attain great speed in operating. The surgeon who could get a leg amputated in three or five minutes, or get the name of doing it in that time, was hailed every where as great. With the limited amount of surgical material there was naturally a marked limitation of the number of surgeons. Even a considerable city might only have one or two real specialists in surgery. So, in a way, this surgeon became a sort of autocrat. As I knew him, he played the part rather well. Why should he not? He was just human like the rest of us.

With the enormously increased incidence of surgical work nowadays surgeons are vastly more numerous. The old time surgical autocrat is no more. The quiet, unpretentious, modest type of surgeon is more in vogue today. Each has been the creation of his environment. I think we must hand this to the old time surgeon. He was usually a deft and skillful operator. Now, with the aid of a careful antiseptic technic and skillful nursing assistants, any bungler can cut thru the abdominal wall, paw around among the abdominal contents, do some surgery, and get out with reasonable assurance that the patient will make a good operative recovery.

I believe the surgeon of today might with advantage study the operative technic, and practice up in the manual dexterity of the old time operator. The old timer certainly had no reason to apologize to his successor because of lack of technical skill.

(2) One hardly knows where to begin on a comparative study of the surgery of today and that of forty-five years ago. A volume could be written about it. One of the most marked differences is in the scope of surgery. I have ventured the guess on a previous occasion that there is ten times the surgery done today that was done forty-five years ago. On reflection I will not change the estimate. Think of the appendix operations done today, the gallbladder and stomach surgery, the kidney and prostatic operations. None of these were attempted by the boldest and most skillful surgeon forty-five years ago.

It seems almost incredible that so common a disease, and one so easily diagnosed as appendicitis, could have wholly escaped discovery up to forty odd years ago. Yet so it was. Every man here who graduated more than forty years ago will bear me out in the statement that appendicitis was never heard of during our student days. It must not be assumed that the disease did not exist, nor that the physician did not atempt a diagnosis and classification.

The popular name "inflammation of the bowels" was used somewhat by the physician, and where he attempted to scientifically designate he called it typhlitis or perityphlitis, depending on whether he decided the condition was an inflammation of the cecum itself or of the pericecal tissues.

An explanation of this lack of knowledge of the pathology of appendicitis will clear up the whole difference between the abdominal surgery of today and of the period we are writing about. In fact, it would almost wholly explain all the notable differences between the surgery of the two periods. This explanation is found in the two words, "antiseptic surgery." When we fully realize this we can in some sense grasp the tremendous debt that surgery and all humanity owes to that splendid group of investigators, Pasteur and Lister, Koch and their associates and successors. I think it is good for us to turn back a page in history once in a while and reflect on the struggles and accomplishments of these masters, these real heroes, who made possible the tremendous strides in surgery which the last few years have seen.

We are too likely to forget the great services of the men who made possible all the brilliant work of the present day in abdominal surgery. We sit back in self-satisfied contemplation of our every day feats of surgery, casting a pitying look on the work of the men of forty years ago. And yet the only practical difference between the two periods is contained in the word antisepsis, and for the first knowledge of this, and its practical application to surgery we are almost wholly indebted to the illustrious group of men, at whose head stand Pasteur and Lister. But for them we might very well this day be treating appendicitis as "inflammation of the bowels" with hot packs and huge doses of opium.

It is some pleasure in this connection for us to remember that our own beloved poet physician, Oliver Wendell Holmes, was perhaps the very first man to catch a vision of the possibilities of antisepsis, in his study of the causes of puerperal infections. He was ahead of his age, and did not have the technic, skill, nor appliances to fully work out the problem.

I feel called upon to say a word in defense of the men who failed to diagnosis appendicitis. It should be remembered that until the advent of antisepsis, surgery in the peritoneal cavity was practically impossible. It was not a lack of boldness, but the possession of sound common sense that prevented the old time surgeon from going into the abdomen during that early stage of appendicitis, when the disease shows itself clearly as a distinct malady of the appendix. The patient then either recovered or he died. If he makes a good recovery, nature surely does a good job in clearing up the products of inflammation inside the peritoneal cavity.

Those of you who have had occasion to enter the peritoneum in a case where there had been to your knowledge a violent infection in the appendix or tubes at some previous time, with recovery, will join me in surprise at the perfect work of nature in clearing away all signs of previous disease. So the postmortem observations, where made long after recovery from appendicitis, afforded practically no light on the pathology of that disease. On the other hand, any of you who have done a postmortem when death was caused by a violent attack of appendicitis will remember the massive adhesions, the pus and necrotic tissue, and can readily see how blind we would be without a previous knowledge of the pathology of the disease. Or, again, some of you have in the earlier days, as have I, attempted an operation on the neglected case of appendicitis, with the belief that the removal of the appendix was necessary. You doubtless found plenty of tissue that seemed quite as badly diseased as the appendix. Without the knowledge gained by operations done earlier, operations only made possible by antisepsis, you would have been very loath to believe that as tiny a thing as the appendix could be the cause of the greater distruction of tissue that lay all around that diminutive organ.

(3) Let us now turn to the consideration of the third subdivision of our subject, the changes that have taken place in the aids of the surgeon, the appliances, facilities, assistants and mechanical equipment. I am assuming that any superiority in the work of the modern surgeon is not due to qualities inherent in the man, but to increasing, general knowledge and improved facilities. It will bear repeating that most of the superiority of modern surgery over that of forty-five years ago is due to the single factor of antisepsis. After this has been said, there yet remains a well defined modicum of improvement that may be credited to the improved appliances, mechanical aids, accessories and assistants of the modern surgeon.

Of these aids I think we may easily place the x-ray at the head. The general laboratory would perhaps be second, while the human aids, the surgical assistants, anesthetists and nursing staff, would certainly come next. Of the first the old time surgeon had nothing at all, and of the third he had only in a very crude form. What would the modern surgeon do without the x-ray, which not only serves as his guide in all bone work, but gives him an accurate diagnosis in numberless stomach, gallbladder, intestinal and renal conditions. How utterly lost he would be without his well equipped laboratory which gives him his Wassermann, his blood counts, his renal functional tests, and all the other valuable data which he gets from that department.

I can imagine the helpless look on the face of a modern surgeon, if he should walk into the operating room ready for work and find it equipped as the best surgeries were forty-five years ago. I can equally imagine the look of consternation that would have come over the face of one of those gruff, sturdy oldtimers, if the white robed bevy of assistants and nurses had come marching into his operating room, as he was about to begin an operation. According to mood he might perhaps have thought the Millerites were right after all, and that resurrection morn was about to cheat him out of a job. Or quite more likely he would, more or less profanely, have berated some one for playing a scurvy trick on him.

Even the anesthetic department has been vastly improved. I remember what to me was the most shocking experience of my student days. It was the very first anesthetic I saw administered. I am glad to record that I never again saw quite so rude and crude an anesthesia. A large cone was made of newspaper, in the apex of which was a large sponge, darkened and soiled by repeated usage. An ounce or two of ether was poured into the sponge and it was clapped onto the hapless victim's face. When roars and kicks of protest became too vigorous, four husky medical students were called upon to pinion each arm and leg, and in due time, by virtue of asphyxia and anesthetic, the patient became unconscious.

The picture of this patient, black in the face, eyes bulging, frothing at the mouth, stertorous breathing that could be heard all over the house, left an impression on my mind as to anesthesia that it took a long time to rid myself of. I think it had much to do with my persistent use of chloroform for the first twenty years of my experience. Nowadays the humblest surgery has its gas-oxygen-ether machine which gently shunts the patient off into forgetfulness as quietly as the little machine itself is trundled into the room on its rubber tires. Giving an anesthetic has become a work of art, taking one a dream of Nirvana.

If we are not doing vastly better surgery today, with all these aids, it will require no proofs to convince one that the surgeon himself has greatly degenerated. I cannot rid myself of the belief that the man who really made a great surgeon of himself, against the tremendous odds of the old days, was really a better all around man than his successor. He certainly had to be more self-reliant and equally certainly he had to be more self-sufficient than we of a later day. He did not have to have any army of assistants and technicians and a whole machine shop to help him to form an opinion. He worked out his own opinions from data gathered by his own personal observations, and he was pretty generally right.

This suggests one criticism of the x-ray and all the rest of our modern surgical equipment, assistants and paraphernalia. The surgeon is too likely to become mechanical and dependent on his appliances, technicians and assistants, and to lose his definite, personal touch with his case. These appliances should not be considered as substitutes for keen personal observation, the close personal touch with the patient and the use of all the individual qualities with which the Almighty has equipped us. They should be considered merely as added facilities.

It would be interesting to take up the different departments of surgery and compare the old and the new. I will content myself with a few words about bone surgery, military surgery and treatment of accidental injuries. The x-ray promised to revolutionize bone surgery. It has not altogether kept the promise. This is not wholly the fault of the x-ray. Even now surgeons do not use the ray often enough in their known fracture cases, nor make it sufficiently a routine to thus examining every injury where fracture might possibly occur.

The improvement in the results of general fracture work in the hands of the average modern surgeon with his x-ray, as compared to the painstaking work of the older generation of surgeons, who depended upon their own mechanical skill and careful personal supervision of their fractures, has been small. In a few special types of fractures the x-ray has enabled the average surgeon to get much better results.

While the x-ray has not brought about the promised revolution in bone surgery, it has proved to be the greatest single contribution to that department in this or any other age. The real revolution has been in military surgery and in the surgery of accidental injuries, especially compound fractures and joint injuries. The credit for this cannot be claimed for the x-ray alone, but for the x-ray plus antisepsis.

The saving of limbs under modern methods, that would have been amputated under the old, can only be realized by one who has observed the working of both plans. The saving of the function of joints and parts has been equally great. Practically every injury opening up the larger joints called for amputation, and the majority of all severe compound fractures entailed a loss of a limb. Modern war and the even more destructive operations of modern industry would have given us a veritable army of cripples, had it not been for the twin benefactors of the race, the x-ray and antiseptic surgery.

A review of the changes that surgery has undergone during the past forty-five years certainly brings a warm glow of pride to the heart of every man who has participated in the struggles of those years. The younger men of the profession may well take pride in this work and sturdily go forward, hoping and planning for even greater things. The great men who made all these splendid things possible as well as we, their more humble coadjutors and followers, hand over to you the torch of progress. See that you keep faith and carry on.

The Basis of Allergic Phenomena. P. J. Hanzlik, San Francisco (Journal A. M. A., June 21, 1924), states that the anaphylactic and anaphylactoid phenomena, collectively the allergic phenomena, appear to rest on a common basis, namely, on disturbances in the physical and chemical (colloidal) mechanisms of the blood and tissues. This is indicated from the evidences taken as a whole, among which are the nearly identical symptomatic, blood and tissue changes in different species described in the literature. Exceptions to this are the period of incubation, and the hyperexcitability of isolated smooth muscle that appear to be peculiar to protein anaphylaxis, and some discrepancies in the histologic changes in the tissues; but these differences may be explained and reconciled on a physical basis. However, in view of the sundry difficulties, the exact explanation of the physical-chemical disturbances is not yet at hand, though it is believed that such disturbances mediate cellular stimulation and depression, and hence alteration in physiologic functions, commonly recognized as symptoms or "reactions," etc.

RETROSPECTION AND INTROSPECTION AFTER FORTY YEARS *

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RETROSPECTION

Two of the most important events of my retrospection occurred in the year 1883, when I became a citizen of Oregon and a member of this society. Becoming a member of this society enabled me to become acquainted with the leading members of the medical profession thruout the state. Each year since then I have been meeting them, or those who are left at our annual meetings, and today I congratulate myself for having joined this earnest, enthusiastic and able group of men. They took up the work inaugurated by Dr. Kinney and his associates and have made of it a splendid success.

In early days we were not able to secure men of eminence from outside of the state to give us the benefit of their experience and ideas, so we called upon members of the society for papers to be read at our meetings. I have listened to many ably prepared papers and to equally able discussions following.

In 1883 the germ theory of disease was just beginning to be accepted by the leading men in the profession, altho it had been suggested and advocated one hundred years before. Hence we must not be unmindful of the fact that all the advancements and discoveries made in our profession during the past fifty years would not have been possible, had it not been for the work done by members laboring thru the proceeding ages.

With the acceptance of this theory of the cause of disease, it was at once realized that diseases might be prevented. Therefore, preventive medicine became of first importance. Bacterial infection of wounds as the cause of suppuration led to methods of preventing the entrance into the wound of such bacteria or to the destruction of them so they would be harmless. Instruments were soaked in carbolic acid solutions, antiseptics were used to wash the wound and carbolic acid spray was kept going in the surgery during operations. The wound was finally dressed in antiseptic dressings.

I spent the year 1886-87 in European hospitals and their operating rooms were so filled with spray as to resemble an Oregon mist. The only operator I met at that time who did not use antiseptics was Lawson Tait. He worked without assistants, was a very rapid and skillful operator and was getting very good results.

It was at our annual meeting, in 1887 I think, while discussing surgical infection, that Dr. A. D. Bevan, now a world-known surgeon, teacher and author, then an active member of this society, used the phrase, "contact infection." It was the realization of the truth conveyed by these words that found us the key that unlocked the door of aseptic surgery and brought its wonderful results to mankind.

While the fight against surgical infection was being waged most zealously, bacteriology was making great headway. The search for pathogenic bacteria was most actively prosecuted. Specific bacteria for a number of diseases were recognized, isolated, cultivated and labeled. One of the first to be recognized and cultured was the tubercle bacillus. A serum produced from the cultured bacilli, called tuberculin, was brought out with great hopes of having found a specific cure for tuberculosis. This disease was by this time looked upon as being transmissible. The bacillus of diphtheria was isolated and an antitoxin produced.

Appendicitis was recognized and operated on first in our own land. Cocaine was recognized as a local anesthetic. Roentgen ray was discovered. Typhoid vaccine was produced, as well as many other vaccines and serums of more or less proven value. Serology was developed. Endocrinology with some wonders to its credit and a promise of still more to follow, chemotherapy, intravenous medication, additional uses for the arsenical preparations, the coal tar derivatives and other chemicals of more or less importance have all been brought to light since this society was organized. Also sanitation has been studied and rules worked out for the proper application of its laws. Bacteriology in its relation to the study of disease was born and raised to its present important position during the life of this society.

INTROSPECTION

We have today magnificent hospitals, equipped with every thing known for the care and comfort of the sick, and many things to aid the physican in his professional work and the study of disease, provided with pathologic, radiologic and bacteriologic laboratories. There are training schools for nurses and trained nurses to wait upon the sick and dance attendance upon the doctors. Operating rooms are as perfect as it is possible for man to prepare. Lying-in wards have banished that dread disease, "child-bed" fever, and greatly reduced infant mortality. Trained workers in our surgery are always

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on guard to see that aseptic surgery is practiced as well as preached. We see operations performed daily that would not have been attempted fifty years ago. Not that we are better surgeons now than those of forty or fifty years ago, but aseptic surgery and facilities for operating under such conditions did not then exist.

Our medical schools are more thoroly equipped, have larger teaching faculties, more hours of study required, and the schools are the equal if not superior to like institutions in any other land. The medical field has broadened so that one mind may not cover it all thoroly. As a result we have many specialties. Rules of sanitation, developed from increased knowledge of the cause and spread of diseases, have been applied to our cities, public buildings and our homes, thereby adding much to our lives in the way of comfort and longevity. With a knowledge of the causes of disease and the manner of its entrance into the human body, the study of preventive medicine has placed such diseases as typhoid fever, yellow fever, chlorea, the plague and others in the class of preventable diseases, and they are no longer the menace they were fifty years ago.

Puerpural fever is rarely met in our maternity wards, and if met, it is because of a breakdown somewhere in the aseptic technic as applied in maternity wards today. Thru the use of antitoxin the mortality of diphtheria has been reduced to almost one-third that of fifty years ago. Cocaine as a local anesthetic is of great value in minor surgery.

The roentgen ray, radium, intravenous medication, new arsenical compounds, chemotherapy, the coal tar derivatives, endocrinology and many others come to mind, to which I have not the time to refer, all the product of the past fifty years. As I look back along those years and recall each separate advance, or I should say victory in our ranks, I feel that to have lived thru such days is glory enough for any man.

"Happy the man and happy he alone,
Who can call today his own;
He who secure within can say,
Tomorrow do thy worst, for I have lived today."

One may be allowed to be a little boastful and to show a little pride, if he happened to have been in the ranks of the profession during the past fifty years.

Do we see anything to criticize in the situation today? Without criticism we might never see and remove our faults. We have more specialists today than ever before. They are a necessary and important part of us. However, it does seem wrong that one just out of college with practically no experience in general work may announce himself as a specialist. It has been suggested, and I endorse the suggestion, that before starting to practice a specialty a young graduate should first have five years in general practice. At the end of this time he might go before a properly constituted board and if qualified be given a diploma as a specialist. This would benefit both the specialist and his future patients.

With the wonderful advances in our laboratory equipment it would seem that diagnosis should have advanced with the rest of the profession, but I doubt if it has done so. This is due, in my opinion, to getting into the careless habit of making a diagnosis mainly from the laboratory report, to the neglect of the clinical history. A laboratory diagnosis is a dangerous one. The expert diagnostician is constantly in touch with the laboratory, but the main points influencing him in making his diagnosis is the clincal hstory. It s up to our teachers to stress the transcendental importance of the clinical history in making a diagnosis.

The perfect technic, as provided for and watched over by trained assistants in our modern surgeries, makes operating so safe and easy that there has grown up in our midst a class of men whom I call operators, in contradistinction to the word surgeon. A surgeon is of course an operator, but he has other qualifications.

So many wonderful discoveries have been made both within and outside of the profession during the past fifty years, such as the telephone, radio, submarine, flying machine, x-ray, radium and so on, that the average individual is ready to believe almost all he hears, for a short time at least. When the pseudoscientist digs up some old idea and announces it to the world thru the lay and medical press with wonderful claims of what it will do, if he is a glib talker and writer and connects up some way with the sex question, no matter how absurd the claims may be, he soon has a following.

Psychoanalysis and rejuvenation are very interesting subjects these days with a certain class. Men and even women go about the country, forming classes and teaching psychoanalysis for "so much per." There is probably an element of truth in each of these subjects, tho certainly not a new scientific discovery. The main part, however, I believe to be pure "tommy rot."

With so many of the credulous in our own profession it is not to be wondered at that there are so many isms and pathies outside of the ranks.

Osteopathy, neuropathy, vitapathy, christian science, chiropractic, each and all may contain an element of truth. No doubt some have been relieved by them. Our objection to them all is that they are practiced by the ignorant and those who have not even the slightest knowledge of the fundamental principle of medicine and, owing to this ignorance, they do infinite harm and are responsible for many avoidable deaths.

What can we do about it? In my opinion the profession should go earnestly to work to secure a member of the presidential cabinet, to be known as the Secretary of Public Health, to secure a federal law regulating the practice of treating the sick and injured. This law should be short and plain. It should provide that, before one may treat the sick or injured as a profession, he must be a graduate from a regular college of medicine. Then I should advise the abolishment of all state examining boards and all state laws regulating the practice of medicine. Then any one, holding a diploma sanctioned by the Secretary of Public Health, may go anywhere beneath the stars and stripes and practice any ism, pathy or system his heart desires.

What of the future? In the knowledge of all that has been accomplished in the past, we may look forward with courage and hope for the day when all diseases shall be either preventable or curable.

Irrational Tendencies in Modern Therapy. Joseph A. Capps, Chicago (Journal A. M. A., July 5, 1924), calls attention to some of the irrational tendencies of present day therapy, and makes suggestions for their correction. There is experimental thearpy and established or proved therapy. In gaining knowledge of any remedial agent, it is necessary that it should first be tried out extensively by qualified experts and approved before it can be recommended for general use. But in much so-called specific therapy of today the general practitioner assumes the role of experimentalist without the clinical facilities, the training or the experience to enable him to pass judgment on their worth. He is altogether too willing to accept the glowing recommendations of the commercially interested drug manufacturer in place of those of the unbiased, scientific physiologist, pharmacologist or clinician who is seeking only the truth. The administration of drugs, serums and vaccines by the intravenous route has become a vogue. The intravenous injection of many preparations seems entirely unnecessary to obtain the full effect of the drug and the dangers are no less real because they are not easily discernible. Vaccine therapy also has been overexploited. Vaccines should be employed only for the conditions in which the most careful experiments have proved their value. The vaccines of unquestioned merit are the smallpox and the typhoid prophylactic vaccines. The numerous vaccines in use for the prevention and treatment of colds, influenza and other respiratory infections are based on unsound theory and practice. Polyvalent vaccines are unscientific in their conception, and an impediment to rational therapeutics.

THE ECONOMIC SIDE OF PREVENTIVE MEDICINE *

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In speaking of the economic side of preventive medicine we come in contact with so many phases of the subject that we almost lose sight of the humane feature in connection therewith. The subject is such a broad one and of such capabilities that it seems a pity to undertake to deal with it in a commercial way. The main features I propose to consider are not those of commercialism but the humanitarian side.

Practically every magazine, newspaper and periodical reaching the layman is continually dealing with this particular subject and especially the economic features. When the surgeon general of the Public Health Service sends out a statement, as he did not later than one week ago, saying to the people of the United States that during this particular year of 1924, in spite of all our alleged knowledge of preventive medicine and of the many great things we can point to with pride as a saving so far as preventive medicine is concerned, not less than 500,000 deaths will result which are preventable and that no less than $3,000,000,000 will be the cost, we must say to ourselves, "Stop and take stock of our knowledge and consider whether or not we have gone as far as we think we have or whether we have accomplished as much as is stated."

Forty years ago statisticians and observers told us that the average age of the human family in the United States was thirty-three years. Today the figures are somewhat indefinite but the best figure we can get is something near fifty-five years, hence we are justified probably in the conclusion that something has taken place in our education, in our mode of conduct, that would indicate real progress has been made. When you come to analyse these figures further we find that, after we reach the age of fifty years (and by the way I understand that is practically the age of the Portland physician today), our expectancy of life is only about twent-one years, yet the same figure that prevailed in 1880. Thus you can readily see the great saving in the average age of life in the way of an increase has been during that period from birth to fifty years.

What has been the cause of this saving? First, we will say, without giving due thought, that the average age has been materially increased by the saving of infant life. This is true in a great measure. People are taught by means of our present educational system, which has many angles, to save their babies. Mothers are taught even the prenatal care. They are instructed to nurse their children, feed them properly, give them proper environment and as a consequence the deaths per one hundred in child life have been cut down to a figure which is almost astounding, when compared to the figure of forty years ago.

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* Read before Fiftieth Annual Meeting of Oregon State Medical Society, Portland, Ore., May 27-29, 1924.

On the other hand, it has not been all in the conservation of infant life by any means. During the past ten years the saving of life from typhoid fever alone amounts to more than fifty thousand people annually, the saving from diphtheria has been at least fifty thousand, and conservative surgery during the past twenty years has been the means of saving the lives of untold numbers of people annually. Formerly all cases of so-called "inflammation of the bowels" reached a hurried death and there was no relief surgically or otherwise. Now these cases are practically all saved by careful surgical means. The same may be said of gastric ulcers, as in many cases of cancer. As a consequence the great saving of life has been in preventive medicine, in surgical interference and in the physical care of infants, but this has practically all been prior to the age of fifty years.

When we take into consideration the studies and sacrifices made by men of our own time, such as Reed and Gorgas, whereby they save not only thousands of lives but almost millions who would have died of malaria and yellow fever, and when we consider the great saving of life incurred particularly by the humanitarian work done under the direction of the Rockefeller Institute, we cannot help marvel at the great results which have been attained and still contrast the work yet to be done with the figures mentioned above as indicated by the surgeon general of the Public Health Service. If 500,000 lives will be lost this year that might have been saved and $3,000,000,000 will be spent in the saving of life that might have been used in some other way, then how great has been in times passed the cost not only in lives and money, when we are confronted with the disease and conditions previous to the great work done in preventive medicine. May we also, as the politician says, "point with pride," in considering the great and constructive enginery used in the late war, when we think that so few people lost their lives as the result of this conflict, compared to the number who were actually engaged in it.

It becomes necessary under these circumstances to give thought to what might be a very ripe and fertile field in the saving of human life and thereby extending the activities of preventive medicine beyond the age of fifty years. This is a great question and one which has been untouched. Probably there are not to exceed ten people in the United States today specializing in diseases of old people. In other words, we are taking no special thought of the changes that are taking place between old and young. Let us compare the physical condition of a man of twenty and the man of sixty. In the man of twenty the elements are combatting and he is able to withstand them, while the man of sixty is not always able to resist them. There is a change in his physical condition and it behooves us as students and as practitioners to find some way to make this life a "little longer."

When we come to the study of comparative physical conditions, comparing the active organisms of the young adult life with that of middle life and old age, we should fit our remedies accordingly. A very good authority, and a man whom I believe we might follow quite readily under the circumstances, has seen fit to divide the life of man into the following periods: Childhood 1 to 10 years, youth from 10 to 20, young adult life 20 to 40, middle life 40 to 70, old age 70 to 95, extreme old age 95. When we take into consideration the condition of the vessels and the nervous system in the period of young adult life, compared to that of later middle life or old age, it is an interesting study and a humane one.

My attention was recently called, for example, to a comparison of the cases of cystitis in the old as compared to that in the young. The man mentioning it to me is a specialist and therapeutist in diseases of the aged. He says one of the natural remedies among physicians would be belladonna. On the other hand, it is a remedy which will aggravate the disease in the aged, while a vasoconstrictor would be the natural remedy and consequently the suitable treatment in cases of senile cystitis would be nux vomica or a solution of strychnine. What holds good with this particular remedy will apply to many others and many articles of diet, including ordinary physical exercise.

The use of appliances offering relief to the aged in rendering them more capable of selfhelp is both economic and humane. For example, we are informed that a recent invention by the French permits paraplegics to walk by means of a small mechanical device worn on the body, underneath the clothing, whereby an individual is able to help himself, thus relieving the state of the burden and adding much to his age and comfort. Note the many means by which we are able to help the aged and infirm in the way of appliances for transportation and making more active the special senses, such as spectacles for the eyes, artificial teeth for the mouth, and various other measures of humane devices to give relief along these lines.

In addition to the humane factor the economic is to be considered. I might mention certain individuals, whose knowledge of their profession in this community is invaluable, altho they may be fifty or past. How much more valuable will that knowledge be, if the individual can retain his faculties ten years beyond the average time. How much more valuable to the community might that knowledge be from seventy to eighty than it was from thirty to forty. If we are able to keep our active and energetic individuals at work ten or more years longer by proper physical training, including feeding, exercise and care, how much more have we accomplished from a humanitarian standpoint.

I am going to call on the members of the profession in the State of Oregon to pay attention medically and otherwise to their aged patients and endeavor to make them live at least ten years longer than they would otherwise. I am also anxious to see some condition brought about, whereby the hospitals will be able to set up a ward, or part of one at least, for the special care of those patients who have passed their sixtieth mile stone and who need special attention so far as their physical condition is concerned.

CONCLUSIONS

1. Much work is yet to be done in the question of preventable death and the reduction of cost in dollars as well as human lives every year.

2. The average age of life has been materially increased but it has been owing to the improved condition prior to the fiftieth year.

3. Nothing has been done in special interest to increasing the average age of those beyond the fiftieth year.

4. The question is not only a humane but an economic one.

5. The physiology and pathology of the aged is a different thing from that in the young adult or middle life.

707 Broadway Building.

SOME REMARKS ON MEDICAL STUDY IN EUROPE

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My recent visit to Switzerland completes the work which I laid out to do on leaving for Europe a year ago and permits me now to attempt some remarks on the present status of European graduate work in medicine, as requested by the editor of Northwest Medicine. In setting down these remarks, however, I must clearly limit them to the field of medicine and its immediately related subjects alone, for I have had neither the time nor inclination to make even a most superficial survey of the work in other fields. A reader must remember, too, that these opinions have been formed casually during the course of my own work and do not pretend to be derived from a studied survey of the various clinics, made purposely for the subject of a report. Again, a reader who is not himself familiar with European graduate study should realize that such work should be in large measure individual and that it is quite hard to group a body of students according to their needs. But it may be well to generalize somewhat for the sake of describing the different forms of work available and to speak of graduate students as forming three main classes.

Into the first class may be placed those students who have recently finished their hospital service and have graduated, and seek further foundation work in European study. These students should remain in residence not less than a year, even tho they have their foreign languages well in hand. Research students form another large group but, naturally, their needs are wholly individual and the clinics or departments with which they wish to attach themselves must be individually sought out. A third group consists mainly of older practitioners who wish to obtain short courses of instruction in special subjects for special purposes, and usually in a short space of time. As the general objectives sought by students who fit more or less into these groups are wholly different and the departmental mechanism by which such work is given varies, a prospective student should have quite clearly in mind what he wishes to do and make his time and financial arrangements correspond to that and not attempt to mix one plan of work with another. In the following remarks I will describe conditions in these clinics which I visited with this arrangement in mind.

Vienna. I visited Vienna in September, 1923. Graduate instruction for foreign students has again apparently been well organized along the plan in vogue during prewar times. The American Medical Association of Vienna had once more passed into good hands and during the preceding year a feeling of cooperative fellowship had again been established between the graduate committee of the university faculty, under the Chairmanship of Professor Wagner, and the members of the Association. The President of the Association told me that good work was being obtained in nearly all branches and that the American students were for the most part satisfied with what they got. The plan of this organization fits in more with the needs of the first and the third of the above mentioned groups of students, but research workers can also find opportunity for special work in several departments. This is especially true in the Pathological Institute and in the old Nothnagel Clinic, which is now headed by Professor Wenkebach, under Winterberg in cardiology and Eppinger in metabolic diseases.

The personnels of the older medical clinics known to prewar American students have been largely scattered. New men are giving the courses for the most part. Because of the hard economic conditions under which members of the professions have had to live during and since the war, many of these have tried to learn enough English to give instruction especially to American students in that language. This has undoubtedly degraded the instruction itself and has tended to lower the zeal of the students. But I am told that this practice is passing away and that more and more of the better men are refusing to teach in other language than German.

There are things to be said both for and against the organized plan of control of courses in Vienna. When the Association is in good hands, the new student who is unfamiliar with foreign ways is undoubtedly helped into work quicker and more easily than when he must seek it out by himself. This very fact, however, has probably tended to lower the grade of students going to Vienna. Again, as has happened repeatedly during the past eighteen years, as all of the older Viennese students have known, the officers of the Association have fallen into the pitfalls of American petty politics, and the instruction as well as the pleasant relations between professors and students have grievously suffered thereby. Some men with whom I talked were working quietly and independently of the Association and were well pleased with the results of their efforts. Professor Wenkebach happened to return home from his American visit of last summer on the same vessel on which I sailed. He told me that it was the aim of the university to build its graduate department of medicine to the point where it again becomes the largest graduate school of medicine in Europe. From what I saw and learned from conversations, it seems evident that this plan was well under way and that American students would always be able to obtain good instruction there.

Living conditions in Vienna since the League of Nations stabilized the Austrian currency are satisfactory enough from the standpoint of the student who can live in a *pension.* A married man intending to take his family with him, as many have done in the past, will find much difficulty at the present time in obtaining a suitable place to live. Housing conditions are bad even in the environs of the city. The city remains overcrowded and but few new houses have been built. Nor is it possible that much new construction can be hoped for for several years to come. But the people are coming back. It seemed to me that there was no doubt of this fact, if they will be content to sit tight and work. The League of Nations has done a very great constructive piece of work in rescuing of Austria from its complete chaos; one that needs to be seen in order to appreciate its magnitude.

Germany. I did not go into Germany and from personal observation cannot make any statements about the opportunities for medical study there. I talked with several American students who had recently worked in some of the clinics, and from these conversations and from a perusal of several of the medical journals during the past year, it is safe to say that much work is being produced. A New York physician spent the winter under Aschhoff at Freiburg and was enthusiastic about the work he did and the direct assistance he received. From everyone with whom I spoke, however, there was heard the story that things are not pleasant for Americans in Germany. A universal hatred towards us seems to be present on every hand and is shown in many ways.

Switzerland. Of all the countries of Europe that I know Switzerland has for me the greatest charm from the standpoint of a place in which to live. This fact, however, cannot bias me in favor of its medical work, for the reason that I know but little personally about it. The opportunity came to visit two of its medical clinics recently and by the work of these I was most favorably impressed.

Professor Sahli's clinic of the University of Bern is small. The medical division of the hospital contains but 150 beds. There are five paid assistants and room for four volunteer assistants. Professor Sahli has been at the head of the department for many years. Most of the research work from the department has been done by Sahli himself. He is distinctly an individualist. Most of the teaching in the department he does himself. He has been a most prodigious worker, like Nothnagel in this respect. He is also like Nothnagel in that he is leaving but few students behind him. This could be m only criticism. The case work is most detailed and complete. Foreign students may become volunteer assistants, and the training received in clinical medicine by them is certainly very valuable. The lack of former students, however, one cannot help but regret. This criticism does not apply to the clinic of Professor Staehelin of the University of Basel.

Professor Staehelin is the ideal medical organizer of a department. Blessed with a simple, kindly nature, he possesses also the enthusiasm for teaching and for clinical research that produces the great clinician. His department is large and he is surrounded by a large group of assistants and students who are constantly seeking encouragement and stimulation at his hands. With Dr. Staub, the biochemist, I saw the only modern dietetic treatment of diabetes that I happened to see in Europe. Most of the clinics visited seemed quite ignorant of the principles of Shaffer and Woodyatt, which we make use of in America. Volunteer assistantships are also open here to foreign students and I was assured that well-prepared American students would be welcomed. It seems to me that this clinic offers the richest opportunity of any for a well-balanced training in modern clinical medicine that I have seen this year. It is necessary, however, that one accept such an assistantship for at least six months, and a full year's time is preferred.

France. Of the medical work in France I know nothing except what I learned from Dr. Ralph Matson, who is now attached to the tuberculosis division of the Laennec Hospital in Paris, under Dr. Rist. This clinic I visited one day with Dr. Matson, who believes that the best work in tuberculosis in Europe is being done by Rist. Those interested in the subject should refer to Dr. Matson for guidance. The wards are beautifully kept; the records are most complete and embody in them also complete sociologic data from the social service division. Their new roentgenologic method of diagnosing bronchiectatic cavities is exceedingly valuable.

England. In London a consistent effort has been made to develop courses of postgraduate study in medicine since the close of the war. This may have had for its object the closer cementing of the medical men of the dominions with the mother country. If this is so, it is a very wise procedure and may be looked upon as forming one of the links in the general chain of empire building, with which the best minds of the British Empire are now busied. Of course, foreign students are as welcome to these courses as are the English, Canadian or Australian.

The Postgraduate Medical Association is a permanent organization with an office in the building of the Royal Society of Medicine, No. 1 Wimpole Street, London, W. I., and with a permanent secretary (Miss M. A. Willis) in charge. The association officers for 1923-24 include such men as Lane, Rolleston, Hale-White, Herbert J. Paterson and Arthur J. Whiting. It has in cooperation with it all of the medical schools and most of the London hospitals. It publishes a monthly bulletin with a complete list of all courses, clinics, demonstrations, etc., that are being given during that month. The courses are available to all graduate students at fees from 2 gns. for one week to 20 gns. for one year. There are given a great many courses in all branches of medicine. Some of them are the general courses given in connection with the undergraduate schools and dispensaries; others are especially arranged for the Association. In so large a program of instruction, in which so many lectures and demonstrators are engaged, it is quite probable that good courses are freely mixed with bad and indifferent ones, so that a student must hunt out for himself that which suits him best.

The English plan of teaching is not like that of the so-called German plan which enters largely into our own undergraduate system, but consists mainly in mere attendance upon lectures, demonstrations and clinics. The latter, too, are seldom carefully prepared beforehand as with us or as in those schools in Europe, in which the German method is held to, but consist of ward walks and dispensary talks arranged extemporaneously to fit the patients as they present themselves. Having been trained in the German method of teaching, I cannot see much in the latter method to admire, but can see, of course, that older practitioners might attend a series of such courses with considerable entertainment and profit. There are given many miscellaneous lectures of great interest also during the course of a year, under the auspices of the Royal Society of Medicine, the Royal College of Surgeons, under special endowed lectureships, etc., that one may attend; and, again, armed with a letter of introduction from some member, one may have free use of the rich medical libraries of the Royal Societies and the different schools.

The great charm of medical study in England lies now, as it has for many years past, in those departments of the large universities, which devote their efforts to the furthering of the pure sciences, related to, but not of, the practice of medicine. The great school of physiology founded by Sharpey, the anatomist, has come down thru the years, exerting an ever increasing influence upon medical thought. It numbers within its fold the names of such men as Foster and Schaeffer, Haliburton, the father of biochemistry, of Langley, Bayliss and Starling, of Barcroft, Haldane and Hartridge, of A. V. Hill, now head of the department of physiology of the University of London, who received the Nobel prize this year in physiology for his work on muscle; of Adrain, and of Mines and Lucas, two brilliant young men, who died shortly after they had given to physiology a glimpse of their powers had they been allowed a well measured life of work. Nor has this school limited itself to one university. It has permeated all of the English schools and still it has held itself together by a spirit of generous, broadminded fellowship which is most charming to observe. It lends itself to a team work that is most helpful to everyone. Problems in the making are freely and openly discussed and criticized by its members; and I am told that not in the memory of man has a confidence been violated by any member of this group. Many foreign research students attach themselves to the various departments presided over by these men, and are generously assisted in their work and shown the greatest courtesy.

The department of cardiology of the University college, headed by Sir Thomas Lewis, is a division of the general department of medicine. It fills a unique place in both the teaching and the study of this branch of medical science. Devoting only a few hours a week to the clinical teaching of cardiovascular diseases, the department makes use of its very large clinical material, for the heart patients from the Pension Board are referred to it, for the purpose of research. It forms a conecting link between the department of physiology of the University and the department of clinical medicine of the University College. It has in its group, besides Dr. Lewis and a certain number of volunteer workers, a physiologist, Dr. Drury, a pathologist, Dr. Grant, and a clinician, Dr. Cotton. It also enjoys the closest possible relationship with the departments of bacteriology, pathology and biochemistry, so that the opportunity for well guided work on the part of the volunteer research worker is unusual. American students are welcomed in the department, provided they will enter into the work of it and will remain long enough to become of service to it. The best time for a volunteer worker to enter is early in June, so that he may become accustomed to the routine of the laboratories during the less busy months of the summer. He is expected to remain at least thruout the following school year and should complete whatever work has been assigned to him.

Graduate students are received in most or all of the English universities. At Cambridge excellent opportunities are to be found in the departments of physiology and biochemistry, and the life that one may live there possesses much more charm than one may understand from the reading of descriptive stories about it. One may take advanced degrees, and a foreign medical student may also come up for the examinations of the Royal Society by meeting the requirements attending them. I talked with a Chicago physician who had spent the winter in graduate work at the University of Edinborough and had been received into membership of the Royal Society by passing the examination this spring. Such membership gives one the right to practice anywhere thruout the British Empire. In two years a member automatically becomes a Fellow of the Royal Society on the payment of certain fees.

The past year has been an exceedingly pleasant one to me. The time has gone by all too quickly. It has been the third year and the third time spent in such a pastime. To most men the gain in specific medical knowledge does not signify so much as the broadening influence on one's life which foreign study affords. The meeting of new peoples, the seeing of different methods and conditions of medical practice, to say nothing of other things which may be of interest to one, adds much to the joy of living. And to one who has sons growing up into the work or is engaged in the teaching of undergraduate students, these sidelights of medicine assume the dignity of real service to others. Were I to be asked by a recent graduate what I considered an ideal plan of graduate study for general medicine today, I think I would say, provided he could speak and write German, first, six months of the routine instruction in clinical medicine and pathology at Vienna; second, a six months' volunteer assistantship in a clinic similar to that of Professor Staehelin of Basel; and, third, a year's residence in physiology or biochemistry at Cambridge, leading to an M.S. or D.Sc. degree. Such a preparation would be a fitting one for the practice of medicine, and it would also find one equipped for the continuation of research work, if one found himself possessed of that type of talent and desire necessary for its furtherance.

The Hague, May 26, 1924.

THE ATTRACTIONS OF EVERETT

The meeting of Washington State Medical Association at Everett, Aug. 13-14, calls attention to this city and its attractions for such a meeting. Some of these are hereby presented. The plan of holding the sessions for the program at a mountain resort, amid the beauties of nature, distant from the noise and bustle of city life, will serve to concentrate the presence and atention of all visitors on the scientific and literary features of the meeting. It is believed this will be one of the most unique and pleasing medical gatherings of the Northwest.

Hodge Building, in which are offices of some Everett physicians

Everett, altho primarily an industrial center, is not a city of "floating" population, but is noted as home-loving and home-owning community, and is highly developed along social and educational lines. The majority of families own homes of their own, and the residence districts, adorned the year around with green lawns, shade trees and parkings, are the city's special pride. There are thirty-one miles of street paving, and one hundred and four of cement sidewalks; streets are wide and, owing to the fact that the street cars have been replaced with safety coaches, thereby clearing the center of the street, they seem unusually so and this makes more room and safety for the growing automobile congestion.

Everett General Hospital

The General Hospital of Everett was opened to the public on February 27, 1924. It has a capacity of seventy-five patients. This is a most modern, up-to-date building, absolutely the last word in hospital construction experience. Every idea has been carried thru as to details, and the wonderful equipment, coordinated with professional intelligence, will tend to prolong life to the welfare of the community. Adjoining the hospital is the "Jordon Home," a beautiful retreat for the nurses of the the institution.

The New Providence Hospital, which the Sisters of Charity erected at a cost of $350,00, is one of the finest institutions in the Northwest. It is built in the form of a cross, the center of the building comprising the main activities. On the first floor in the different wings are found the kitchen, chapel, retiring rooms for the sisters, and the large private rooms. All private rooms on this floor are provided with private baths and every modern hospital convenience.

On the second floor are more wards, the four-bed wards the largest in the hospital. Here are also found the maternity wards and baby rooms. The third floor is similar to the second. The entire fourth floor, comprising the center core of the structure, is taken up with the surgery. All rooms center around the octahedral rotunda with its huge glass dome furnishing a flood of brilliant light. To soften this light there is a suspended ceiling.

There are two main operating rooms. In one is a surgeon's elevated tier, from which medical men may watch the work of the surgeon on the floor. There is also a fracture room for minor surgery, and the specialist's room. This entire floor is furnished in white tile. The hospital has a capacity of one hundred twenty-six patients. The building is heated by steam with the general heating and electrical plant in the subbasement. The hospital was dedicated May 12, 1924.

The Big Four Inn and surrounding territory is one of the beauty spots of the Pacific Northwest, situated in Snohomish County. It is an ideal place for sight-seeing and recreation. From Hartford it is reached by taking comfortable gasoline coaches which make their way up the canyon of the south fork of the Stillaguamish River, over the most novel railroad in the world.

The majestic beauty of this trip and district cannot be surpassed. A few hours of circuitous travel in and out of tunnels along this bold and rocky canyon and you arrive at the Big Four Inn. The Inn offers splendid accommodations for its guests. Beside the hotel proper, there are scores of individual tent houses which are most comfortable and attractive, surrounding the hotel. There is a spacious hostess room, where during the evenings dancing is enjoyed. In the dining room delicious meals are served thruout the day.

Providence Hospital

Then there is a golf course and tennis court on the grounds, and of course the hikes to the glaciers, in the midst of the roughest of the Cascade range, in fact every possible enjoyment for the tourist. It is well worth the consideration of the sight-seeing public.

Big Four Inn

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JULY, 1924

EDITORIAL

INSULIN AND THE GENERAL PRACTITIONER

Much has been written about the dangers of the use of insulin in diabetes, enough to give a more or less general impression that it is of the armamentarium of the specialist. While a certain degree of very accurate knowledge is necessary, none of it should be beyond the knowledge of the average physician. The dangers of insulin shock have been greatly exaggerated and by this very exaggeration have produced in some practitioners a feeling of security unwarranted by the facts.

In order to avoid serious accidents the physician must learn to adjust insulin dosage to diet dosage. They must balance one against the other. This should be on a mathematical basis with a margin of safety. The mathematical basis involves a knowledge of the carbohydrate burning power of insulin approximately, for it is a *variable;* second, a knowledge of the source of carbohydrates, from carbohydrates proper, from protein and a small supply from fats; third, a table of food values; fourth, a knowledge of the limitations of fat in a diabetic diet; and, fifth, a scale and the willingness to use the same. Roughly, these may be stated as follows: A mild diabetic will be controlled without the use of insulin and a diet consisting of 1 gram of carbohydrate, 1 of protein and 2.5 gram of fat for each kilogram of body weight (2.2 lbs.) If after three days of this diet, the urine still contains sugar, iletin will be necessary and should be begun with a small dose before breakfast; safely, this may be three units (Lilly iletin). After this has been given for three days, if sugar persists, increases may be made every two days of three units until ten are given before breakfast; further additions should be first before the evening, then also before the noon meal, always cautiously observing the urine for sugar and the patient for evidences of insulin shock. If by reason of persistence of glycosuria after a total of fifty units daily are given, consultation with a specialist should be in order, as the case is unusually severe and diet adjustment of a more profound type may be necessary. On this method sugar may appear in the night or early morning urine, a finding that can usually be safely disregarded so long as all the day urine is sugar free. It is not so much a question of glycosuria as one of adequately burning a sufficient amount of glucose to keep the ketones oxydized.

In treating children certain especial dangers are encountered. The disease is of greater severity and much more likely to be progressive; hence, closer application is necessary. Possibly the specialistic function of blood sugar studies should be instituted. Children require more accurate fat to carbohydrate adjustments. As they are more susceptible to acidosis, they require greater relative proportions of protein than adults. The requirements of growth are greater; hence the relative proportions of insulin are greater, at the same time requiring closer observation for insulin shock, because the lesser total quantity of blood does not dilute the insulin as greatly as in the adult. Some practitioners regard a slight glycosuria as a margin of safety, so long as there be no acidosis, and the patient gains in weight and strength.

The presence of infections always introduces a new variable, namely the severity of the diabetes, and may necessitate the advice of special skill and possibly blood sugar observations. Diabetic coma developed or impending should always be observed and treated by those of special skill.

F. E.

MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The seventy-fifth annual session of the A. M. A. was held in Chicago June 9 to 13. The attendance, over 7200, was greater than at any previous meeting. This was partly because the meeting was held in a centrally located city of the middle west and partly because of an intensive campaign on the part of the officers of the Cook County Medical Society to secure the enrollment of a large number of their society. Over 2,000 of the latter registered.

The outstanding features of this meeting were: (1) The meeting place. The Municipal Pier was the headquarters for the entire meeting with the exception of the House of Delegates. The enrollment was handled in a most efficient manner, one being able to register, receive a program, a button, an invitation to the social functions and a synopsis of the daily events within ten minutes after arrival at the pier.

(2) The sectional meetings. These were easily found. All that was required was for one to go down the outside walk of the pier until he came to the section he was desirous of attending. The meetings were so arranged that one could attend practically any of the sections of medicine or medical specialties without conflicting meetings being held. For instance, the morning was given over to general medicine, while the afternoon was devoted to one of the medical specialties, such as urology, pediatrics, etc. Those wishing surgical work could attend the general surgical meeting in the morning or the surgical specialties in the afternoon. Ophthalmology was given in the morning, otolaryngology in the afternoon and so on thru the entire list of sectional meetings. This is a decided improvement over previous meetings. The meetings of the House of Delegates were so arranged that on Wednesday there was no meeting, thus permitting the delegates to avail themselves of the scientific program.

(3) Exhibits. The were so arranged that one could spend a very profitable day or two in observing the various demonstrations and exhibits. The scientific exhibits given by the various universities were perhaps the best of any meeting, each university taking some particular phase of medicine and making a complete resume of the subject. The large clinics were also represented in this way. The gold medal was given to the Mayo Clinic for its exhibit of the pathology of the gallbladder, the silver medal to Northwestern University for its pathologic specimens, showing all lesions of the heart. One of the new features of the scientific exhibit is the showing of lantern slides, either thrown upon a temporary screen or in large racks well illuminated. Undoubtedly this method of demonstration will be used more and more all the time.

The commercial exhibit was as large or larger than the scientific and there one found everything pertaining to medicine. Especially interesting were the new types of x-ray machines, both for ordinary use and deep therapy. The ease with which these large machines are now manipulated shows a striking development in this branch of medicine. One could not help being impressed by the activities of lay organizations which have to deal with medical problems. Their exhibits, both in the scientific and commercial sections, showed them now practically to control social welfare departments, organizations for the control of cancer, for the dissemination of knowledge pertaining to blindness and many other similar organizations.

(4) Moving pictures and diagnostic clinics. Many important papers were presented thru the medium of a moving picture machine which was constantly in operation. Deserving special mention was the "Premature Infant Station," under the jurisdiction of Dr. Julius Hess, of Chicago. Here was everything pertaining to the newborn child, the incubator baby, the incubator, the ambulance, infant feeding, infant clothing, ventilation and sanitation. Many felt that this should have received one of the first medals.

(5) Scientific Program. As the papers will all be published with their discussions in the *Journal of the A. M. A.*, it is not necessary to review the individual papers.

(6) Social activities. The visiting ladies were well cared for from the time they arrived in Chicago until they left. The publc meeting, at which time the new President, Dr. Wm. A. Pusey, was inaugurated, was held in the the large auditorium and was considered one of the best meetings of its kind in many years.

(7) The House of Delegates. The transactions of the House of Delegates will be published in full. The election of Dr. W. D. Haggard of Nashville, Tenn., as President-Elect and Dr. E. B. McDaniel of Portland, Ore., as Vice-President-Elect met with universal approval, as both men are very popular not only with the Delegates but with the physicians about the country.

(8) Home of the A. M. A. One of the features of this meeting was the demonstration of the new home of the A. M. A. A great many of the visiting physicians visited the home daily and were shown the utmost courtesy by the guides who demonstrated all of the many activities of the A. M. A. Perhaps the department of greatest interest, but from which the least was obtained in the way of information, was the private card index of every physician in the United States, whether a member or not. Here is filed every newspaper clipping of every physician as well as other interesting data.

(9) Presessional meetings. The Association for the Study of Internal Secretions and the National Association for the Study of Prevention of Goiter held their annual meetings on Monday and Tuesday at the Drake and Sherman Hotels. Many of the visiting physicians and surgeons availed themselves of this opportunity to hear the very latest theories and the results of late experiments in these specialties. The Chicago surgeons and internists did not hold many clinics b common agreement, so that nothing detracted from the regular meeting of the Association.

(10) Newspaper publicity. The Chicago papers failed miserably in their attmpt to cover the meeting. The published articles were confined entirely to a none too accurate description of some untried experiment or surgical procedure rather than giving the public a well worded resume of authentic and very important research work, clinical procedures and methods in diagnosis. The papers dealing with anesthesia in childbirth, with gland transplantation, with needless operations on tonsils, needless operations for appendix and many similar catchy headlines appeared in the papers. If there is any criticism of the management of the entire meeting, it would be that the publicity department failed utterly to supply the Chicago papers with authentic material for the purpose of disseminating knowledge regarding this very important meeting. It might be stated that the papers of Chicago were so completely filled with detailed accounts of every act of the murderers of the Frank boy that it perhaps accounted for the lack of space devoted to the meeting of the Association.

All in all this meeting of the Association was perhaps the most successful ever held and the leaders in the profession feel that the A. M. A. has at last struck a responsive chord in the hearts of the entire medical profession. That this is true was demonstrated by the large attendance, the large scientific and commercial exhibits, the scientific program, the moving pictures and diagnostic clinics and finally by the organization of the Women's Auxiliary and the enthusiasm shown by the visitors at the Journal Building. G. W. S.

AN INTERNATIONAL MEDICAL MEETING

From time to time the desire has been expressed for closer professional and social relations between the representatives of the British Empire and the United States, whose language, outlook on life and principles of action are the same and who should be closely associated in common matters of policy and purpose. Such cooperation has been demonstrated in our section of the country thru the meetings of the Pacific Northwest Medical Association. At the gathering last month at Vancouver over 600 physicians assembled from the United States, Canada and other countries in one the the greatest medical gatherings ever held in that section and the largest in the history of this association. The spirit of hospitality and cordiality of the Canadians was marked and among all was evidence of most kindly feeling between them and the visitors from the United States. While such relationship has always been in existence, a closer friendship has been cemented from the common experience and sufferings of the great war. The protecting arm of the British Empire was visible in the English warships at anchor in the harbor, one of them the largest battleship afloat. The presence of similar United States fighting machines in the near-by harbors of Puget Sound served to emphasize the combined friendly protection of these two great nations.

It is interesting to note whence came this body of medical men and women. Three hundred and twenty from the United States were distributed thus: Washington 169, Oregon 85, Montana 27, Idaho 17, Utah 10, the others from seven scattered states. British Columbia provided 156, with 24 from the provinces, Alberta, Saskatchewan, Ontario and Quebec. England and China contributed two each with one from Hawaii. The international character of this meeting is indicated by the various countries, states and provinces which provided the many visitors.

The program contained papers on varied subjects, presented by men from all parts of Canada and eastern United States, besides several representatives from England. One cannot fail to be impressed by the delightful and choice command of the English language and the evidence of culture among the English trained medical men. In the presence of so many addresses of conspicuous merit, it is hoped a few personal references will not be considered invidious or in any manner reflecting on others.

Dr. S. A. Kinnier Wilson gave a very interesting and instructive address on some common neurologic symptoms. His splendid observation and keen, accurate knowledge of nervous diseases were shown in his neurologic clinic on the second day. His specialty of nervous diseases is not one that attracts majority of medical men, but he certainly handled the subject in a way that made everyone feel he would like very much to hear the speaker again. Dr. W. W. Chipman, of McGill University, as usual gave some splendid addresses. The one entitled "Puerperal Uterus and its Infection" dwelt particularly on prevention and gave splendid conservative advices as to treatment of the condition. His Saturday morning lecture on adolescent dysmenorrhea was a genuine classic, giving the latest that we know about this baffling condition. Dr. Cotton, of Boston, gave some very timely and good advice on the standardization of the treatment of fractures. Very interesting talks on hemorrhage and later on the skin were given by Dr. John Tait, professor of physiology at McGill University. At the luncheon a few talks were delivered, one of the most interesting being by the very active and genial general secretary of the Canadian Medical Association, Dr. T. C. Routley. Sir John Thompson Walker gave an address at the same function, at which time was also heard the address of the retiring president, Dr. Homer D. Dudley.

It is expected that most of the papers read at this meeting will be published in this journal. They will appear in subsequent issues, appropriately grouped with other papers.

THE BOISE ANNUAL MEETING

The annual meeting of the Idaho State Medical Association, held at Boise last month, was an example of the state meeting which has come into vogue during recent years, in which the program is chiefly confined to members of the association, and at which time members from various parts of the state have the opportunity of renewing acquaintances and discussing medical matters of common interest. While the attendance was not large, it represented all parts of the state. The program contained papers of live interest, which was demonstrated by the free discussion which followed the reading of each. They were all read by members of the Idaho association except that by Dr. McCornack, of Spokane, on good sense in infant feeding, which presented an appeal to all listeners.

The outstanding feature of the program was found in the addresses of Dr. W. A. Price, of Cleveland, concerning the role of calcium in health and disease and the correct diagnosis of dental infections as demonstrated by the x-ray. One who has never heard Dr. Price cannot appreciate the convincing message which he presents. This comprises a revelation as to the cause and effect of dental infections far beyond the comprehension of one who has not listened to his illustrative cases and demonstrations. It would be of immense profit to the medical profession of all our states, if they had the opportunity of listening to the addresses presented by Dr. Price.

The hospitality of the Boise physicians and their wives made each day of the gathering one of satisfaction. To one unaccustomed to the results of irrigation, the verdure and fertility of Idaho's irrigated fields is a revelation. As the summer heat had not yet arrived, the coolness of the temperature served to enhance the beauties of nature, serving to produce an abiding impression of the attractions of Boise and vicinity. As the annual meeting next year is to be held in Pocatello, one can but be tempted by the desire to repeat the visit to a section of similar attractions.

NEXT MONTH'S MEETING AT EVERETT

The committees in charge of program and transportation for the meeting of the State Medical Association at the Big Four Inn on Wednesday and Thursday, Aug. 13 and 14, have everything well in hand. They wish to emphasize the fact that not only transportation by auto from Everett to the Hartford and Eastern Railway station where the bus is to be taken for the Big Four Inn, but also accommodations at the Inn will be ample to care for all visiting physicians. This is planned to be an unusual and extraordinary meeting. The charm of the scenery, together with the comfortable and first class accommodations at the Inn, in the Stillaguamish wonderland, designated by many as the "Switzerland of America," will add greatly to the attractions of this gathering. Those who do not attend the meeting will most assuredly miss something worth while.

The American College of Surgeons will hold the meeting of the Northwest section in Everett on Monday and Tuesday, Aug. 11 and 12. There is nothing that can add so much toward the standardization of hospitals as a meeting of this organization. With two new splendid hospitals, such as Everett now has, it is very fortunate and fitting that the meeting should be held in Snohomish County. The clinics in connection with this meeting will be open to physicians, whether they are members of the College or not, as well as to the remainder of the program.

The program is in process of formation. So far as determined at present, it will be as follows:

PRELIMINARY PROGRAM

1. Prevention of Goiter as Applied to the State of Washington. Dr. E. S. West, Yakima.
2. Activities and Work of King County Goiter Prevention Committee. Dr. D. C. Hall, University of Washington, Seattle.
3. Public Health League
4. Acute Osteomyelitis and Its Relation to the General Practitioner. Dr. R. T. Congdon, Wenatchee.
5. Recent Additions to our Knowledge of the Etiology and Treatment of Rickets. Dr. D. M. Dayton, Tacoma.
7. Treatment of Fracture Skull. Dr. Geo. A. Downs, Spokane.
8. Paper by Eastern Man.
9. Blood Transfusion; Indication, Selection of Donor; Choice of Method. Dr. W. C. Speidel, Seattle.
10. The Uterosacral Ligament. Dr. A. P. Duryee, Everett.
11. Paper by Eastern Man.

NORTHWEST MEDICINE ANNUAL MEETING

In connection with the meeting at Vancouver last month, the annual meeting of Northwest Medical Publishing Asociation, which controls the publication of NORTHWEST MEDICINE, was held at a luncheon with the editorial staff of the journal. The following representatives of the respective state associations were present: Oregon, C. L. Booth and J. E. Else, Portland. Washington, H. D. Dudley, P. W. Willis and C. A. Smith, Seattle; W. F. West, Everett; J. R. Brown, Tacoma; Frederick Epplen, Spokane. Idaho, J. L. Stewart, Boise; J. W. Gue, Caldwell; D. L. Alexander, Twin Falls. Montana, E. M. Larson, Great Falls; W. F. Attix, Lewistown. Reports were presented showing the favorable financial condition of the journal and its enlargement during the past year. A growing interest on the part of the profession in the four states was demonstrated. Comments and criticisms as to policy and management were presented, which are solicited also from the profession of the Northwest. The following officers were elected for the ensuing year: President, H. D. Dudley, Seattle; vice-president, C. J. Smith, Portland; secretary and editor-in-chief, C. A. Smith, Seattle; business editor and treasurer, J. B. Eagleson, Seattle.

DANISH OINTMENT FOR TREATMENT OF SCABIES

In our May issue was published a paper by Dr. Oliver S. Ormsby, in which appeared the formula of the Danish ointment for the treatment of scabies. Thru an oversight a sentance was omitted, whose absence vitated the whole formula. It is presented herewith correctly.

(1) 1 kg. of sublimated sulphur is dissolved at a gentle heat in 2 kg. of a 50 per cent solution of potassium hydroxide. This makes a clear, yellow solution.

(2) 225 g. of vaseline and 225 g. of water-free lanoline are carefully mixed, without heating.

(3) To this mixture 375 g. of the solution of sulphur in potash-lye, mentioned above, is added.

(4) Fresh zinc hydroxide is prepared in mixing 28 g. $ZnSO_4$ and 40 g. 20 per cent sodium hydroxide, and this is afterward added to the ointment.

(5) Liquid paraffine is added to obtain a total weight of 1000 g.

(6) 5 g. of benzaldehyde is added to check the somewhat disagreeable odor of sulphuretted hydrogen.

MEDICAL NOTES

ATTENTION, FORMER ILLINOIS DOCTORS

Will any and all doctors, former residents of Illinois, or descendents of pioneer physicians of the "Illinois country", communicate at once with the Committee on Medical History, Illinois State Medical Society, 6244 North Campbell Avenue, Chicago. Under the sponsorship of the Illinois State Medical Society there is in preparation "A History of Medical Practice in the State of Illinois" that must go to the printer at an early date. In order that this volume may be accurate and complete, all possible assistance is asked from every source, as to personal data and experiences, including diaries, photographs and similar documentary momentoes of pioneer Illinois doctors and of progressive phases of medical practice, as well as of achievements in fields other than those of medical science.

Prompt return in good condition is promised for any thing loaned the committee, the personnel of which is: Drs. O. B. Will, Peoria; C. B. Johnson, Champaign; Carl E. Black, Jacksonville; George A. Discus, Streator; James H. Hutton, Chicago; Chas. J. Whalen, Chicago, Chairman.

The scope of the volume will range from the discovery of Illinois to modern times. Thru this period of over 250 years there is much of thrilling interest to be detailed. Collection of the human interest data can come only from the families or closest friends of the pioneers, many of whom long ago removed to distant sections of the United States. Thru the kindness of editors of various medical journals it is hoped to reach those who may be able to loan valuable material to the compilers, who guarantee careful guardianship of anything sent for publication.

Some of the subjects touched will be: Physicians accompanying early explorers; government surgeons and physicians in attendance at the forts; early medicine in Illinois; theories of healing from the days of the Aborigines thru the mound-builders; French and English explorers; the anteboundary days; sporadic settlers; medical attendants for the covered wagon; herb doctors; primitive surgery; medicine and missionaries; migration of pioneer physicians to new terrtory; the "circuit-riding and saddle-bag" doctors and their burdens, triumphs and perils; pioneers as "utility citizens;" Illinois men in war time (there are four conflicts to be considered since the opening of the nineteenth century); Illinois medical men away from medicine, i. e., in industry, science, belles-lettres, art, music and literature. Photographs especially are desired, also copies of letters, statements of "cures" and "new methods," diaries and the like.

OREGON

Commendation for Public Information. Dr. A. E. Rockey, of Portland, has recently published several articles in the dail press regarding vivisection and the valuable contributions to the welfare of the human race obtained from experimental work on lower animals. These contributions have been recognized by letters from leading medical authorities. The Surgeon General writes from Washington, D. C., "The surgeon general is in hearty accord with your views regarding the use of animals in research work, and your efforts are heartily appreciated." Dr. Walter B. Cannon, of the Council on Health and Public Instruction of the A. M. A., says, "It is just such public instruction as this that in the end is going to safeguard our course."

Maintenance of the Doernbecher Hospital. This hospital for the treatment of crippled children will soon be erected on Marquam hill near the University of Oregon Medical School. A guild has been organized for its direction, composed of prominent men and women of Portland and adjacent cities. Endowments for the hospital and beds, as well as memberships of various sorts, are to be secured for the support of the institution.

Portland Physician Honored. The election of Dr. E. B. McDaniel, of Portland, as vice-president of the American Medical Association, is a source of gratification to his many friends in Portland and the Northwest. This reflects honor not only on him but the whole profession of Oregon. Our congratulations are extended to Dr. McDaniel.

Mid-Columbia Medical Society held a meeting at Hood River, June 11, at the Chamber of Commerce rooms. A paper was read by Dr. Gertrude French on "Refraction and Diseases of the Eye," discussed by Dr. Thayne, of Hood River. Dr. W. N. Morse, of Wasco, read a paper on "Dilitation of the Stomach," discussed by Dr. Sifton, of The Dalles. The next meeting of the society will be held at Wasco.

Coos and Curry Counties Medical Society held a meeting at North Bend, June 3, attended by doctors of these two counties. The program was in charge of Dr. Phil Keiser of North Bend. Dr. Ira D. Bartle, of North Bend, read a paper on insulin. A number of interesting clinical cases were presented.

Woman Physician President. The American Association of Women Physicians held its annual conference in Chicago, June 10. Dr. Katherine C. Manian, of Portland, was elected president. This month she sailed for London, where she will represent the association.

Dr. G. W. Marshall, formerly of Baker, has located for practice at Canyon City.

WASHINGTON

New Wing of Hospital Opened. The new wing of St. Luke's hospital, at Spokane, built at a cost of $235,000, was formally opened June 19. The addition makes this one of the most modern and up-to-date hospitals in the country. Already the construction of another wing to conform with this is in contemplation.

Hospital Site Offered. A citizen of Buckley and his wife have offered the Chamber of Commerce their home site of four acres for the establishment of a hospital to serve the towns of Enumclaw and Buckley. They have offered to contribute the sum of $15,000 in addition, providing an equal amount is contributed by others and that the authorities of these two cities pay them interest on their contribution during heir lives, they to retain the use of the house until their death. Representatives of the two cities are analysing the proposition before accepting the same.

Mobile Unit of Shrine Hospital. At the meeting of the National hospital board of the Shrine, held in Kansas City, June 4, it was voted to establish a mobile unit for crippled children at Spokane. It was also voted to award $50,000 for annual maintenance. Dr. C. F. Eikenbary will be surgeon in charge of the unit. By this action Spokane is to have the first mobile unit established in North America, which ultimately will result in the establishment of a hospital in that city.

New Hospital to be Erected. A new hospital is to built for the Stanwood-East Stanwood district to cost about $30,000. A stock company is to be formed, each citizen of that territory being requested to subscribe. Hitherto it has been customary to patronize other hospitals in that district.

Railway Surgeons Convention. The second annual convention of the Association of Great Northern Surgeons was held at Spokane, June 23-24. More than 125 surgeons of this railway were in attendance. Papers were presented dealing with various phases of fractures and other railway injuries. The following officers were elected for the ensuing year: President, Dr. J. G. Cunningham, Spokane; first vice-president, Dr. F. B. Bogardis, Kalispell, Mont.; second vice-president, R. D. Compbell, Grand Forks, N. D.; third vice-president, Dr. C. B. Lewis, St. Cloud. Minn.; secretary-treasurer, Dr. R. C. Webb, Minneapolis.

Washington State Graduate Nurses Association held its annual meeting at Spokane, June 10-12, more than one hundred delegates being present. Addresses were presented by members of the association on various matters of interest to the nursing profession. Mrs. Ella W. Harrison, of Everett, was elected president for the ensuing year.

Washington State Organization for Public Health Nursing held a meeting at Spokane, June 12. Miss Ella S. Erickson. Seattle, was elected president; Mrs. Mary Finney, Tacoma, first vice-president; Mrs. Mary L. Allen, Ellensburg, second vice-president; Miss Ellen Joyce, Seatle, secretary.

Nurses Cottage Constructed. A three story nurses cottage at the Northern Hospital, Sedro-Woolley, has been constructed at a cost of $78,000. It will afford accommodation for 117 occupants. •

Health Officer Honored. Dr. Paul A. Turner, Washington state director of health, last month attended the conference of state and provincial health officers in Lansing, Mich. He was elected a member of the executive board.

Dr. E. A. Rich, of Tacoma, returned home last month after a visit to the orthopedic hospital of Prof. Putti in Bologna, Italy, supplemented by clinic work in Paris and London.

Appointed Medical Colonel. Dr. S. E. Lambert, of Spokane, was last month appointed a commissioned coloned in the medical corps of the reserves.

Appointed Health Officer. Dr. L. S. Dewey, of Okanogan, was last month elected health officer and county physician. He also serves as county coroner.

Medical Wedding. Dr. George R. Marshall, of Seattle, was married, June 11, to Miss Barbara Rosella Kelley of the same city.

MONTANA

Spotted Fever Appears. Early last month seven cases of spotted fever were reported to the state department of public health. One death was reported after a ten days' illness at the Forsyth hospital at Ingomar.

Hospital Opened for Juveniles. The children's pavilion at the Montana state tuberculosis sanatorium, at Galen, is to be opened this month. Gov. J. M. Dixon will preside and make an address. This pavilion is a one-story brick building with two large wards and private rooms. It has accommodations for thirty patients.

Reelected Health Officer. Dr. W. H. Pickett, of Great Falls, was last month reelected City-County health officer by the city-county board of health. This is a full-time office, supported in part by the U. S. Public Health Service.

OBITUARY

Dr. Elsworth E. Shaw, of Walla Walla, Wash, died 23, after an illness of several years duration. He was born in Palmyra, Me., 1861. After primary education in the public schools he marticulated in Bowdoin college and later obtained his medical degree June 23, after an illness of several years duration. He took postgraduate course in Bellevue Hospital Medical College in New York. He began practice at Fort Fairfield, Me. He located in Walla Walla in 1888. He always took an active interest in local affairs and was a supporter of health movements. He was a member of the board of trustees of the Walla Walla public library and its president for the past fifteen years. He was widely known and respected by all resident in that part of the state.

Dr. Alonzo W. Hill of Freewater, Ore., died June 26 after a week's illness. He was born at Logansport, Ind., in 1851. He graduated from University of Michigan Medical School in 1876. He settled in Milton thirty-five years ago. For the past twenty-four years he has conducted a drug store at Freewater.

Dr. Isabel Sedgwick, of Portland, Ore., died June 26 from an overdose of self administered chloroform, of which she had been a chronic user. She was 50 years of age. She had practiced for a number of years in Portland.

REPORTS OF SOCIETY MEETINGS

OREGON STATE MEDICAL SOCIETY

REPORT OF THE TRANSACTIONS OF THE HOUSE OF DELEGATES OF THE FIFTIETH ANNUAL MEETING OF OREGON STATE MEDICAL SOCIETY, PORTLAND, ORE., MAY 27-29, 1924

TUESDAY, MAY 27

Meeting called to order at 10:30 a. m. by President E. B. McDaniel.

State Industrial Act

As Mr. Wm. A. Marshall, representative of the State Industrial Accident Commission, and Mr. E. J. Stack, from the Oregon Workmen's Compensation League were in waiting, Dr. C. J. Smith, acting for the Committee on State Industrial Affairs, asked that they be given a hearing to present the case of the initiative measure which provides for radical changes in the present law. Mr. Stack spoke at some length about the provisions of the measure that would make State Accident Insurance compulsory in all hazardous occupations and optional with all other citizens in the state. It also eliminates contract physicians and hospital associations except in isolated localities, and provides for penalties of employers for neglect in maintaining safety appliances. The law also would automatically prevent any private insurance company from doing business in the state of Oregon after Jan. 1, 1925. Mr. Marshall stated, that whereas 44½ per cent of the annual premiums in private companies were eaten up in expenses and profits, only 9 per cent was so used in the State Accident Commission. He asserted that private companies were doing all they could to discredit the work of the Commission, even to selling insurance below cost. He also recommended that the physician's fee bill be increased. The subject was extensively discussed. Dr. C. J. Smith brought out the fact that, altho the physicians were a vitally interested third party, they had not been consulted at all in the framing of the measure and thought a thoro understanding should be had of the measure, so that we would know whether we are to favor or oppose. Other discussion was held by Drs. E. A. Sommer, W. W. P. Holt, A. W. Smith, and others. Owing to the lateness of the hour, the matter was referred by the President to the Committee on State Industrial Affairs with instructions to report on the following day.

The roll call disclosed the following officers and delegates present: E. B. McDaniel, A. C. Kinney, Richmond Kelly, C. L. Booth, W. T. Williamson, William Kuykendall, S. M. Strohecker, A. W. Baird, M. B. Marcellus, Paul Rockey, C. J. Smith, R. S. Stearns, Roy McDaniel, H. S. Bean, W. B. Holden, Wilson Johnston, G. W. Millett, J. A. Pettit, C. E. Sears, A. W. Smith, E. A. Sommer, Frederick Stricker, Fred J. Ziegler, R. J. Pilkington, W. W. P. Holt, Mary C. Rowland, and C. E. Mason. N. E. Winnard was seated as a delegate from the Central Willamette

Society; George E. Dix from Coos and Curry County Society; and W. P. McAdory from Eastern Oregon Society.

Inasmuch as the Secretary's report of the last year's meeting was published in full in Northwest Medicine, motion was carried that its reading be dispensed with.

Secretary's report for 1923-24 was called for. This report being printed in the May issue of the League Bulletin, copies of which were in the hands of all the delegates, it was moved and carried that its reading be dispensed with.

Dr. Ralph Walker, being absent, the Treasurer's report was put over to the next day.

Report of the work of the Council, being embodied in the printed Secretary's report, was dispensed with.

Under reports of Standing Committees, Dr. F. D. Stricker, Chairman, reported for the Committee on Public Health and Disease Prevention which was accepted and placed on file.

Report on Public Policy and Legislation

Dr. E. A. Sommer, Chairman of the Committee on Public Policy and Legislation, had no written report. This committee is made up of the Executive Committee of the Oregon Public Health League. He covered some activities of the League and urged the importance of supporting it in the approaching legislative campaign. He said in part: "One of the problems is in regard to a bill at the next legislature which would provide that every person, practicing the healing art in the state of Oregon, would be obliged to designate the type of practice in which he engages on his card, certificate, etc., so that any patient needing a physician may know the kind of doctor he is going to." He recommended that a bill be introduced in the legislature that any organization wishing to incorporate for the purpose of dissemination of knowledge should first be passed on by the Board of Regents of the State of Oregon. Another idea was a bill that no institution for the education of a person for the practice of medicine or surgery should require for admission less than a high school education. This report was accepted.

Dr. W. T. Williamson, Chairman of the Committee on Medicolegal Defense, read a report showing the scope of work covered by this committee during the past year, giving the number and outcome of the cases brought before it.

In the discusion that followed, Dr. Wilson Johnston said a suit won against a doctor who is not a member is just as damaging as if he were a member. The safest way in performing any operation is to have a written agreement with the patient, giving permission to do whatever is necessary under the circumstances.

Dr. Fred J. Ziegler brought out an interesting point in that in a civil case such as malpractice suit, the prosecution has the right to put the physician on the stand in a preliminary hearing and ask him all manner of questions pertaining to the treatment and care of the case, thereby furnishing the prosecution with information as to what the line of defense would eventually be. Most physicians are not aware that this procedure is legal.

Dr. Wilson Johnston requested that, if any doctors are threatened with a suit, they should immediately communicate with the Council and get the facts before the Committee because they have the means to defend the members.

Dr. E. A. Sommer made a short talk. saying that at present the doctor is held responsible for the anesthetist. He said the responsibility should be placed with the hospital where it belongs.

Dr. J. E. Pettit gave a report of the delegate to the A. M. A. meeting.

Revision of Constitution

Dr. W. T. Williamson, Chairman of the Committee on the Revision of Constitution, reported that the Committee had spent a great deal of time in going over the constitution and bylaws and getting them into final shape and presented the constitution and bylaws as so amended.

The Secretary then read only the changes as have been made. Changes in the bylaws were made, providing for dividing the state into districts and assigning a councilor to each district, to be responsble for the affairs therein and to give a report at each annual session on his work.

The other change dealt with the manner of amending the bylaws, "requiring a three-fourths vote of all the delegates present at the session, providing each component society is represented and after the amendment has lain upon the table for one day."

Dr. Paul Rockey proposed the following amendment: "Chapter XIII, Section 1. The Council of this Society may remit to the Oregon Public Health League a sum of money not to exceed ten dollars per member per year, and in no instance greater than fifty per cent of the amount received from each member during the year.

'Section 2. The Council of this Society may appoint an executive secretary, who may also act as the executive secretary of the Oregon Public Health League."

Nomination of Officers

The House of Delegates then went into a Committee of the whole to present nominations for the various offices which were as follows: Drs. Paul Rockey and C. E. Sears, President-elect; Dr. Ralph Fenton, First Vice-President; Dr. Lee Bouvy, La Grand, Second Vice-President; Dr. Geo. E. Dix, Marshfield, Third Vice-President; Dr. Ralph Walker, Treasurer; Dr. C. L. Booth, Secretary. Dr. Sears withdrew his name in favor of Dr. Rockey.

Councilors: S. Mount, C. J. Smith, Wm. Kuykendall, term of 3 years; E. B. McDaniel, Otis Wight, Roy Stearns, term of 2 years; W. D. Morse, Roy McDaniel, M. G. Howard, C. E. Sears, term of 1 year.

The President appointed an Auditing Committee, composed of C. J. Smith, O. B. Wight, and F. J. Ziegler.

The President appointed a Resolution Committee, composed of Wm. Kuykendall, E. Mingus, R. J. Pilkington.

The meeting then adjourned to meet the following day.

WEDNESDAY, MAY 28

Meeting called to order by President E. B. McDaniel at 9:30 a. m.

Roll call by Secretary showed the following delegates and officers present: E. B. McDaniel, A. C. Kinney, C. L. Booth, W. T. Williamson, William Kuykendall, A. W. Baird, S. M. Strohecker, M. B. Marcellus, Paul Rockey, C. J. Smith, N. E. Winnard, H. C. Bean, Wilson Johnston, J. E. Pettit, C. E. Sears, Frederick Stricker. R. J. Pilkington, G. E. Dix, W. P. McAdory, and Mary C. Rowland.

The Secretary read the minutes of the House of Delegates of the preceding morning which were approved.

Under unfinished business, Dr. C. J. Smith asked that fifteen or twenty minutes be set aside in the general session for a further discussion of the industrial accident measure brought up on the preceding day, stating that it was extremely important and that he thought a large majority of the men were entirely unacquainted with the provisions of the measure. It was suggested that it be brought up immediately following Dr. Sharpe's paper.

Revision of Constitution

Under report of Committee on Revision of Constitution, Dr. C. J. Smith moved that the House of Delegates accept the constitution as published in the League Bulletin. Having been proposed and read at the session a year ago and copies having been sent to all component societies as per constitutional requirements, it is now in regular order for adoption. Motion was carried that the constitution be adopted.

Dr. C. J. Smith moved that Section 2, Chapter 7, of the bylaws be amended as read. This amendment is as follows:

Section 2. The Board of Councilors at its first meeting in the annual session of the Oregon State Medical Society shall apportion the state in districts, making the boundaries of such districts as practicable as possible and the President shall assign the various members of the Board of Councilors to each district. Said councilor shall visit each component society in his district at least once a year for the purpose of inquiring into the condition of the profession and for improving and increasing the zeal of the component societies and the members. He shall make an annual report of his doings and of the condition of the profession of each component society in his district to each annual session of the House of Delegates of this Society.

Motion carried.

Dr. C. J. Smith moved the adoption of the amendment to Chapter 14. Dr. Paul Rockey raised the point of order, stating that the amendment he introduced on the previous day should be considered first. Point of order was ruled out by the Chair. Some discussion took place over this amendment as submitted and the amendment finally adopted read as follows:

These bylaws may be amended at any annual session by three-fourths vote of all the delegates present at the session, and after the amendment has laid upon the table for one day.

Dr. Paul Rockey's amendment to the bylaws proposed the preceding day was then presented. It read as follows:

Chapter 13, Section 1. The Council of this Society may remit to the Oregon Public Health League a sum of money not to exceed $10.00 per member per year and in no instance greater than fifty per cent of the amount received from each member during the year.

Section 2. The Council of this Society may appoint an Executive Secretary who may also act as the Executive Secretary of the Oregon Public Health League.

Dr. Rockey moved the adoption of the amendment.

Under discussion, Dr. C. J. Smith said, "I differ from Dr. Rockey. It is a complete upsetting of the workings of the Oregon State Medical Society. It means the transferring of the work of one committee to another. In other words, the legislative committee is doing the so-called legislative and political work of the organization. One of the reasons for the creation of the League was to take care of the political measures of the Society. No greater stigma can be placed on you when you go to Salem than to say you are a member of the Oregon State Medical Society. You have much more influence and power if you are represented by the League. The amendment is extremely indefinite. It says 'may.' We are committed in the bylaws to the collection of $20.00, one-half to be used by the Oregon Puglis Health League. I hope that this amendment will not prevail."

Dr. Rockey spoke as follows: "I think it is a question of misunderstanding. The purpose of that amendment which is not indefinite, but only very supple, permits the Council of the State Society to operate the State Society. In proposing that amendment I had no criticism to make, no attack to make on the League, nor any unkindness toward any member. The purpose of that amendment would not be to change the working of the Society at all. It would not be to move one particular of the League's work or officers, but it would mean that the support of the League comes from the members of this Society and it would put the ultimate control in the hands of the Council. I think I am speaking for a large number of members of the Society. You require every member of this Society to pay a comparatively large sum in dues, half of which goes to the League. Let us assume that the League is every desirable thing that its friends think it is. Let us assume that at this time no change should be made in the League work, personnel or anything else. If you will look a little way beyond this year or next year, you will see that what you have done is to create a kind of separate Society but proscribe its support. You can retain every good feature and yet make your machinery logical, make it as all the members would wish it made. I think the measure is not understood. You cannot have divided responsibility and successful administration and the work of the League as set forth is only a part of the activities of the medical profession and the part is not greater than the whole. I can see no harm in the proposed amendment and a lot of possible good."

Dr. E. A. Sommer said, "The League began as an organization absolutely independent of the State Society, simply to start out to have some representation in such things as came up before the legislature. A large number of men contributed to this organization. After the League was established and we had been in the legislature several times, there was a feeling that this is a problem where every doctor should contribute to the organization. The matter was taken up and the League was incorporated as a committee of the Society. What assurance has the League, when it is in the midst of a campaign, that the Council may not meet from time to time and take this revenue away? The constitution provides definitely that a certain sum should go to the League. There are a great many angles to this. The League had an Executive Secretary in the beginning. The Society had no Executive Secretary. I think the members of the executive committee who are doing this work should have something to say in regard to who is their Secretary. I don't think it is a fair problem, simply turning it over after we have started in and been making progress to put the obligations on the League at the present time. We don't all agree as to whether we should have representation or not, but we do know that other states are raising dues for the same purpose. We should all be in this game and all help."

Dr. H. C. Bean said that, inasmuch as the State Society gives money to the League, why should not the State Society control the League?

Dr. Rockey said, he did not intend to stop or change the working of the League, simply to provide a proper control of it by the Society to which it belongs. He felt that the Councilors of the State Society should be the ones to control the working of the League.

Dr. J. A. Pettit spoke as follows: "I feel that we shouldn't question the opinion of a man like C. J. Smith. Some of the young ones have only been in a few years. It is not an easy matter to get things to the legislature. The first thing they pick up in the legislature is that we are a medical organization with a personal axe to grind. I don't think that the dignity of the medical society is hurt at all. The State Medical Society elects all the directors of the League, officers and executive committee. The separation is nominal but psychologic. If you will compare the officers, you will find that two-thirds are the same. The State Medical Society does control the League. The object of it is the psychologic point Dr. Smith brought up and the permanency Dr. Smith brought up. You can't have the change in personnel as in the Medical Society. In the Medical Society certain offices are passed out for distinction and merit. These men may not care for political and legislative work. Our political situation has been handled better the last few years than it has been in the past. The League is getting to the point where it will be on the offensive instead of the defensive. What does the resolution amount to anyway? The same men are members of and control both organizations. I am opposed to this change. I think it will be a big mistake and will not do any good."

Dr. A. W. Smith objected to paying the fee of $25, feeling that it was keeping out a man who is not yet established in his profession. He said his one objection is that a fee of $25 is too much and can't be paid by the average man. He thought the League was doing wonderful work but that someone else ought to put up the funds.

Dr. Wilson Johnston said, "We would never get anywhere on a 'may' proposition. We will not do it until we have to do it. The Washington League receives $25 from voluntary subscribers, which is in addition to the medical dues. A man's own profession should come first. When did any component society receive any visitor until the League was operating? When they were paying $5 they got nothing. They are getting more now than ever before. I move that 'may' be changed to 'shall'."

Dr. S. M. Strohecker asked, "Why swap horses at this particular time? In view of the fact that we have never had anything better, I think it is the easiest solution at the present time. The medical profession sit back and the rest of the people put up the money. We must have something and I think the League is the solution, even tho it may not be complete or perfect."

Dr. E. A. Sommer moved to amend the amendment to the effect that the executive committee of the League and the Council of this Society elect the Executive Secretary.

At this point, Dr. W. T. Williamson was asked to take the President's chair and Dr. E. B. McDaniel spoke against Dr. Rockey's amendment, stating that during the past year he had put in a great deal of time covering the various medical societies of the State and had found them working in harmony with the present conditions. He thought that the Oregon State Medical Society and the Oregon Public Health League are very close and doing very good work. Is opposed to any amendments or any changes of any kind at the present time.

Dr. C. L. Booth emphasized the present coordination of the officers of the State Society and the League, calling attention to the fact that the members of the State Society now elect all the officers and directors of the League and that the executive committee is elected by the Board of Directors, making a complete dovetailing of the two organizations.

At this juncture Drs. Johnston and Sommer withdrew their amendments. Vote was then called for on Dr. Rockey's amendment which was brought to a standing vote and lost by a large majority (7 for, 15 against).

Dr. C. J. Smith moved to adopt the bylaws as a whole as amended. Motion carried.

Dr. Calvin S. White presented a memorial for Dr. Robert C. Yenney in the form of an appropriation of $100 to Whitman College which is establishing a Department of Biology. On motion this was referred to the Councilors for action. Dr. Sommer asked that the Board of Councilors be requested to give $250 instead of $100.

Dr. Ralph C. Walker read the Treasurer's report for the past year which was referred to the Auditing Committee.

Dr. William W. P. Holt of Medford was recognized and in behalf of the Jackson Count Medical Society extended a cordial invitation to the State Medical Societ to meet at Medford in 1925. On motion this was referred to the Council for action.

There being no further business, the House of Delegates adjourned.

MINUTES OF THE GENERAL BUSINESS MEETING, MAY 28

Meeting called to order by President E. B. McDaniel at 10:40 a. m.

Dr. S. M. Strohecker announced the stag banquet at the Hotel Portland that evening, and the dinner for the ladies of the profession and doctors' wives at the Hillbilla.

Election of Officers

The first business in order was the election of officers for the ensuing year. The Secretary read the names of the following as recommended by the House of Delegates for the various offices: Paul Rockey, Portland, President-Elect; Ralph Fenton, Portland, First Vice-President; Lee Bouvy, La Grande, Second Vice-President; G. E. Dix, Marshfield, Third Vice-President; C. L. Booth, Portland, Secretary; R. C. Walker, Portland, Treasurer.

There being no further nominations from the floor, the Secretary was successively authorized to cast unanimous ballot in favor of the above as officers for the ensuing year.

The following Councilors were elected for three years: Hugh S. Mount, Oregon City; C. J. Smith, Portland; Wm. Kuykendall, Eugene.

The following Councilors were elected for two years: E. B. McDaniel, Portland; O. B. Wight, Portland; R. S. Stearns, Portland.

The following Councilors were elected for one year: W. B. Morse, Salem; R. C. McDaniel, Portland; C. E. Sears, Portland.

On the written recommendation of the Council of the State Society, names of the following were then presented for honorary membership: Simeon Edward Josephi, Portland; Oliver M. Dodson, Baker; Osman B. Doane, The Dalles; S. F. Sharpe, Athena; J. F. Bell, Portland; A. C. Smith, Portland. Moved and carried that the action of the Council be favorably considered.

Dr. Wm. F. West, President of the Washington State Medical Association, was then presented and spoke briefly.

Workmen's Compensation Initiative Bill

Dr. C. J. Smith at this time presented the matter of the Workmen's Compensation Initiative Bill. He thought it should be acted upon as a committee of the whole, calling attention to the fact that the medical profession had not been represented at all in its drafting and thought it very dangerous to the future of the medical profession, if this bill should go into effect. He thought the medical profession of the state should actively oppose it. Dr. E. B. McDaniel considered it one of the most important questions before the medical society. Dr. Fred Ziegler believed that only a small proportion of the physicians knew about the dangerous provisions of the bill. Dr. C. J. Smith said that the first section should be enough to condemn the bill and called attention to the fact that it is an initiative bill, which amends the constitution. Dr. E. A. Sommer stressed the autocratic power given the Commission by this bill and classed it as a very dangerous, forward step, toward the socialization of medicine.

It was moved by Dr. C. J. Smith that the society go on record as opposed to the measure and that the Commission on Legislation and Public Policy be instructed to take active steps against its passage. The motion was carried unanimously.

Dr. E. B. McDaniel then gave the annual Presidential Address.

Dr. Boyden, of Pendleton, announced that the Eastern Oregon Medical Society will meet at Bingham Springs, July 28, and 29, and invited members of the State Medical Society to visit them at that time.

Dr. A. C. Kinney, incoming President, was then presented and addressed the meeting.

Physical Inspection of Children

Mr. W. F. Woodard presented the following resolution: RESOLVED, That the Oregon State Medical Society endorse the principle involved in the physical inspection of children attending the public schools in the state and endorse such legislation as will encompass this result.

He then spoke as follows: "As a school director during four years, it has been increasingly evident that our state is lacking in physical examination laws. Other states in the Union have either permissive or mandatory laws. Oregon has but one law and that is a dental inspection law. It shall not be effective except in districts of the first class. At the coming session there is no reason why our state should not place itself in the same position as Rhode Island, where there is an annual sum to pay for the examination of children. Physical examination should be made once a year. Eye tests, hearing, obvious difficulties of the throat, and external injuries to the body or defects or deformities should be taken care of, unless the parent indicates his objection in writing. Any measure introduced in this legislature will have to carry the exception as to the objection by the parent. Indiana and Pennsylvania have medical inspection. In our state we have only reached the first step, the permissible examination of children. I have come here to ask if this body will adopt a resolution, committing the Society to the principles of physical inspection, mandatory in character, and one which will cause the physical inspection of every school child to be undertaken and properly noted once each year. I have been in the eastern part of the state, walked 150 miles. visited many small school houses, where there is neither physician nor trained nurse within reach at any time. I have seen many instances of neglected child life. I leave the resolution in the hands of the committee, with the recommendation that the preparations for a bill of this kind should seem to come from some of the rural members instead of those from Portland."

Dr. Else moved the adoption of the resolution. Dr. Williamson felt that the Society was unanimously in favor of the measure and moved to amend by referring it to the Council for analysis, with the recommendation of this body that we favor the resolution. On motion the resolution was referred to the Council.

Mr. Frank S. Ward, executive secretary of the Oregon Public Health League, gave a brief talk on the "Aims and Purposes of the League."

Work of American Medical Association

Dr. W. T. Williamson gave a few minutes talk on the "Work of the American Medical Association." He spoke in part as follows: "The A. M. A. is simply the expression of the strength, force and ambitions of the medical profession thruout the United States. We have the unit, the little society that may be in the city or the country, and that is made up of a group; then comes the State Society and thru its delegates and the general interest taken by all of the bodies the central organization exists. I have been trying to understand the diversity of it and the usefulness of it for over three years and I haven't gotten to the end of it yet. It is a perfectly wonderful organization. The councils and standing committees are given special work and it is marvelous and almost beyond comprehension what is being accomplished. There is a deviation to the good of the cause of medicine that is most gratifying to men who have the welfare of the people at heart. One of the councils does enough work to justify the existence of the whole body. I think that Oregon, as every other state, ought to try as fast as may be to watch what measures seem to be superficial to the majority and when they are adopted to quit kicking and to turn around and say, 'Well, I don't like that but I'll try to make it a success.' The A. M. A. has benefited its organization and is doing wonderful work. The best way is for each unit to support what is adopted and work together, always remembering that we have organized opposition of a spiritual character on one hand and a material organization on the other. But we have the interests of the public at heart. Let us come together in a spirit of harmony and good will. work with the majority and Oregon will fill the place as one of the elements that are making the future progress of medicine in Oregon a success."

SCIENTIFIC PROGRAM,

TUESDAY, MAY 27

"Acute and Chronic Brain Injuries in Adults." Dr. Wm. Shape, New York City. Discussion was opened by Dr. Geo. W. Swift, Seattle, Wash., followed by Drs. E. Mingus, Geo. Cathey, H. M. Green, and E. A. Sommer. Discussion closed by Dr. Sharpe.

"The Early Recognition of Heart Disorders." Dr. T. Homer Coffin, Portland. Discussion was opened by Dr. Harold Bean, Portland, Dr. Coffin closed the discussion.

"Fibromyomata of the Uterus." Dr. E. B. Pickel, Medford. Discussion was opened by Dr. R. C. Coffey, Portland, followed by Drs. C. T. Sweeney, Medford; W. L. Bishop, W. B. Johnson, A. C. Smith, E. L. Boyden and O. D. Doane. Discussion closed by Dr. Pickel.

"Surgery Forty-five Years Ago and Now." Dr. Wm. Kuykendall, Eugene. Discussion was opened by Dr. A. J. Giesy, Portland, followed by Drs. A. C. Smith, A. C. Kinney and Calvin White.

WEDNESDAY, MAY 28

"Brain Injuries in Newborn Babies and Children." Dr. Wm. Sharpe, New York City. Discussion was opened by Dr. Wm. F. West, Everett, Wash., followed by Drs. H. M. Green, J. B. Bilderback, May Cardwell, George Cathey, Andrew C. Smith, E. Mingus, H. J. Davidson, Jessie McGavin and Wm. A. Amos. Discussion closed by Dr. Sharpe.

"Retrospection and Introspection after Forty Years." Dr. A. J. Fulton, Astoria. Discussion was opened by Dr. S. E. Josephi. General discussion by Drs. O. D. Doane and A. C. Smith.

"Intestinal Obstruction Illustrated with Moving Pictures of Visible Peristalsis and Operation." Drs. W. B. Holden and Karl Moran, Portland. Discussion was opened by Dr. R. C. Coffey, followed by Dr. J. E. Else, closed by Dr. Holden.

"Goiter Work in the Public Schools of Portland." Dr. Anna Mumby, Portland. Discussion was opened by Dr. J. E. Else, followed by Drs. A. W. Moore and W. W. P. Holt, Medford.

"The Recent Botulism Epidemic in Oregon." Dr. Frederick Stricker, Portland. Discusion was opened by Dr. James H. Robnett, followed by Drs. A. C. Kinney, Levin, Wm. A. Amos, Hunt.

A Carnivorous Diet in the Treatment of Flagellate Diarrhea. Robert W. Hegner, Baltimore (Journal A. M. A., July 5, 1924), calls attention to a method of treatment that has great promise for the control of intestinal disturbances due to the presence of protozoa. Considerable evidence has been obtained from a study of lower animals that a carnivorous diet is unfavorable for the existence within the intestine of flagellates belonging to the genera Giardia (Lamblia) and Trichomonas. Hagner presents (1) the results of observations and experiments on animals, and (2) the results of treating human patients with a carnivorous diet. Of fifteen rats that were fed on a carnivorous diet for one week, 7 per cent lost their giardias, 7 per cent lost their trichomonads, the remaining 93 per cent lost on the average 90 per cent of their giardias, and 98.2 per cent of their trichomonads. A large variety of menus composed chiefly of meat and eggs for the elimination of intestinal protozoa, are given. Hegner's experience is limited to one case of trichomonas and two of giardia infection. The patient with trichmonas infection had suffered from diarrhea for years. The stools were watery and were swarming with trichomonads. Three days after beginning the meat diet, he began to pass formed stools in which no flagellates could be found, and he was feeling much better.

PUBLIC HEALTH LEAGUES

WASHINGTON

NOTABLES TO GIVE PUBLIC ADDRESSES

The League will have charge of a public program to be given in Seattle during the Medical Extension Course of the Universiay of Washington, July 15. The speakers will include Sir John Herbert Parsons of London, who will speak on "Conservation of Vision;" Dr. John Osborne Polak of Brooklyn, whose subject will be "Prenatal Care," and Dr. Elliott P. Joslin of Boston on the topic of "Diabetes." Dr. H. J. Whitacre of Tacoma, president of the League, will preside. This meeting is in keeping with the League purpose of utilizing every possible means of giving the message of scientific medicine to the general public.

BUREAU OF NUTRITION

The membership of the recently organized Bureau of Nutrition of the League has been completed. Five prominent nutrition experts of Washington are on this bureau. Martha Koehne, Assistant Professor of Home Economics of the University of Washington, is chairman, and the other members are Leila W. Hunt, Head of Foods and Nutrition, Washington State College; Miss Anna L. Post, Supervisor of Home Economics, Tacoma High School; Miss Frances Skinner, Head, Department of Home Economics, Ellensburg State Normal School, and Miss Gertrude Longley, Head, Department of Home Economics, Bellingham State Normal School.

ENFORCING THE PROFESSIONAL LAWS

A recent report filed with the Department of Licenses by Mr. Morrow, enforcement officer of that state department, shows a large number of prosecutions of those violating Washington's professional laws. The list includes a number of dentists who have been practicing for several years without license, which they have been able to do because of the uncertainty of the constitutionality of the dental law. The last legislature passed a new act, however, and the department has been proceeding to force the unlicensed operators out of practice.

Several of these who insist on calling themselves "doctor" and in attempting medical practice have been caught in this drive, taken into court and fined.

The Department of Licenses has only a small fund available for this very important work. The Public Health League has pledged its support for adequate appropriations for this department at the next legislative session. Washington not only needs good health laws, but strong enforcement policies too.

HOSPITAL STANDARDIZATION

Edited by HERBERT E. COE, M.D.

DEVELOPMENT OF HOSPITAL CLINICS

One of the chief aims of hospital standardization is to improve the care of the average hospital patient. It is generally recognized that the care received by the average patient in a teaching hospital is better than that in other hospitals.

In the Northwest we do not have—with the exception of the Medical Department of the University of Oregon—hospitals connected with teaching institutions, and it is the purpose of this article to suggest to the profession, to standardization committees and to hospital boards the possibility of developing something to supply this lack.

Some two years ago, due to the requirements of the Council on Hospitals and Medical Education of the A. M. A., a few hospitals instituted courses of instruction for internes, and in some instances supplemented didactic instruction with clinics and bedside demonstrations. These clinics in at least one hospital were later opened to all members of the profession who might care to attend. The inevitable result of this was that the demonstrator put increased care and thought on the cases which he was to exhibit and was prepared to answer questions as to methods of diagnosis, differential diagnosis, treatment, etc. He may have had all these points in mind and he may not, but he was compelled to formulate his ideas and to be prepared to give definite statements in support of them. Who benefited? Everyone concerned—patient, audience and demonstrator. Of course it required a little expenditure of time and energy on the part of the demonstrator, but he soon realized that it was distinctly of value to him.

Shortly after this the Seattle Surgical Society started the Saturday morning clinics and began the publication of a weekly bulletin, notifying physicians in the vicnity of the clinios to be held each week. This again required that those who posted cases should be prepared to talk upon them. Since then another hospital and the Seattle Academy of Surgery have followed out this same idea.

There is no question as to this being a type of advertising, legitimate advertising to be sure, but nevertheless advertising. But at the same time it improves the care given to the average case and makes the demonstrator better qualified to treat a similar case in the future which, to return to our original statement, is one of the chief aims of hospital standardization. Why should not hospital standardization committees, or better yet hospital boards, develop such plan in each hospital thruout the Northwest, thus bringing in a limited way, the benefits of teaching hospitals to the aid of our patients? It is clearly the duty of each of us to give our patients the best possible care, and of each hospital board to provide us with the means of doing this for hospital cases, and some such plan would unquestionably tend to raise the standards of treatment. Unfortunately many of us do not possess the ability to talk or demonstrate and so would probably be compelled to limit ourselves to answering to the best of our ability whatever questions might be asked, but the good effect of a careful preparation of the case would be the same whether the demonstrator lectured or not, whether he had a large gallery or no one.

It should be feasible each week, when visiting doctors would be welcome and would be informed in advance thru some suitable medium of the cases to be demonstrated. Such work should not be limited to surgery, but should be arranged for all classes of cases. At first, of course, few would attend the clinics but gradually they would develop and physicians would come to accept these days as established and would begin to make use of them. Case reports could be collected and published from each hospital or from the hospitals of each city, and would undoubtedly provide good material for this journal. Also such clinics, by virtue of the definite times and previous notices, would be most acceptable to visitors from neighboring or more distant cities and especially valuable in our entertainment of the stranger within our gates. Let us develop this idea, suiting the details to local conditions, thus doing our bit in advancing medical science rather than being among those who are being dragged along by the steady evolution of the healing art.

Effect of Tonsillectomy on the General Health of Twelve Hundred Children. The operation for the removal of tonsils and adenoids has become such a common one that it is no longer restricted to cases in which the tonsils are obviously diseased. A so-called prophylactic tonsillectomy is now generally performed, so that the indications for the removal of these organs need not be very definite. The real value of the operation can be determined only by repeated examinations of the children before operation and at stated intervals after the operation. Such a study has been made by Albert D. Kaiser, Rochester, N. Y., (Journal A. M. A., July 5, 1924), to show what the operation has done for 1,200 children contrasted with an equal number who were not operated on. An analysis of the complaints in the group operated on shows that by far the most common one was mouth breathing. Ten hundred and fifty-seven oue of the 1,200 were mouth breathers. This complaint was relieved in 88.5 per cent of the children. Fifty-four of these children showed incomplete removal of the adrenoid tissue, which may account for the failure to get relief in some of these children. A history of frequent sore throat occurred in 674 children studied before operation. Ten per cent of those complaining of symptoms failed to get relief from the operation. One year after operation, only 5 per cent complained of frequent sore throat. During the last two years, however, frequent sore throats returned to 5 per cent additional of the children operated on. Frequent head colds were complained of by nearly half the children in this group previous to operation. During the last three years, 146, or 27 per cent, were still subject to frequent head cold, and forty-one were having this infection for the first time since operation.

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Diseases of Middle Life. The Prevention, Recognition and Treatment of the Morbid Processes of Special Significance in this Critical Life Period. Comprising Twenty-two Original Articles by Various Eminent Authorities. Edited by Frank A. Craig, M.D., Associate Director of the Clinical and Sociological Department of the Henry Phipps Institute of the University of Pennsylvania. In Two Volumes. Illustrated. Cloth. Vol. I 951 pp. Vol. II 920 pp. $15.00. F. A. Davis Co., Philadelphia 1923.

One of the chief objects of this work is to aid physicians in making periodic health examinations to discover disease in its early stages and adopt measures to avert so far as possible threatening pathology. The writers are well known and able, practically all teachers in the leading medical schools of this country. Such men as Bassler, Beadsley, Farr, Friedenwald, Knowles, Licht, Lockhardt, Mohler, Pepper, Piersol, Sailer, Talley, Chandler Walker, Yawger Harrison, Hayhurst, Hays, Hinsdale, Holloway, Lutz, McCurdy, Morrison, Thomas, and last but not least, Craig.

It might be questioned whether there is any crying need for a work treating of diseases included in standard books on theory and practice. In these volumes the description of diseases has been presented in a somewhat different form and from another angle than in the purely formal textbooks. This is particularly noticeable in Craig's "Diseases of the Respiratory Tract," where instead of the usual elaborate and exhaustive details he compresses in short space the clinical essentials of the subject in a most practical and admirable summary. The conditions peculiar to later life, as arteriosclerosis, hypertension, and degenerative changes of the heart and kidneys naturally receive special attention.

The excellence of the articles is somewhat uneven, as in all works written by numerous authors. The section on "Diet in Middle Life," by Farr, is unusually good in being both sensible and practical, as in decrying special diets, in exposing the fallacies of differences between white and red meats, and in ridiculing the frequent diagnosis of intestinal autointoxication. A most sound and sensible article. So also Taley's monograph on "Diseases of the Heart" is one of the best summaries of modern cardiology that we have read. Here, too, this difficult subject is written in a clear and lucid style and divested of unimportant and boresome textbook details.

There is an unusually good description of dyspepsia due to arteriosclerosis, by Friedenwald, but there is a rather inadequate disquistion on chronic cholecystitis, by Lutz, in which he states that the gallbladder shadow on x-ray film "is practically evidence of a pathological condition." This has not been borne out by recent experience and the gallbladder has been found normal in cases where a shadow was found on the film. The explanation has been that of some mineral matter in the bile. As a whole the book is of high excellence and accomplishes its mission admirably.

The Human Testis. Its Gross Anatomy, Histology, Physiology, Pathology, with Particular Reference to its Endocrinology, Aberrations of Function and Correlation to other Endocrines, as well as to Diseases of the Testes and Studies in Testicular Transplantation and the Effects of the Testicular Secretions on the Organism. By Max Thorek, M.D., Surgeon-in-Chief, American Hospital, Chicago, etc. Cloth, 308 illustrations, 548 pp. J. B. Lippincott Co., Philadelphia and London. 1924.

It is indeed flattering to the male that the human testis has achieved such importance as to demand a work of this magnitude and distinction. The ovary has heretofore received altogether too much attention in comparison with its analogue. The author has stated succinctly in the subtitle the scope of this book. The portion devoted to the influence of the internal secretion of the testes and the disturbances of the other endocrines caused by deficiency of the testicular hormone is of great interest and importance to practitioners of all departments of medicine. But perhaps the part of the treatise which will attract most notice is that considering recent methods by which "rejuvenation" of the senile, and others deficient in male gonad endocrine, is accomplished by Steinach's ligation of the vas, and implantation of the testis. The author has worked with Steinach and has done much original experimentation on animals and surgery on humans in both vasoligation and testicular implantation. Steinach has not been given sufficient credit for his long and painstaking investigations regarding the functions of the internal secretion of the testis from the interstitial Leydig cells. His experiments on animals are most astonishing, whereby he could actually transform the sex of the young from the female to male or vice versa by transplantation of the sex gland into a castrated animal, or make a hermaphrodite by transplanting both ovary and testicle into a castrated animal.

The author records in detail cases of human patients, in whom vasoligation and implantation have been done by him for various conditions. The technic and all other circumstances connected with such treatment and the various conditions in which it may be indicated, have been most carefully worked out.

While "rejuvenation" has been carried to ridiculous and preposterous extremes in popular literature, notably by Gertrude Atherton (who ought to know better) in Black Oxen, yet the whole subject is of the utmost importance and deserves the serious consideration of the medical profession in so far as experimental work has ascertained certain remarkable facts. There is no better or more authoritative work than this by Thorek in disclosing all the newer discoveries and advances in this most interesting field of research.

The Treatment of the Common Disorders of Digestion. A Handbook for Physicians and Students. By John L. Kantor, Ph.D., M.D. Chief in Gastro-intestinal Diseases, Vanderbilt Clinic, University of Columbia. Illustrated. 245 pp. $4.75. C. V. Mosby Co., St. Louis. 1924.

This volume presents the principles and objectives of therapy covering disorders of digestion in a clear and precise manner. After a chapter defining general principles and methods, a detailed treatment is given for ptosis, gastric irritation, gastric and duodenal ulcers, constipation, achylia gastrica, gallbladder disease and the diarrheas. The author says the theory that bacterial infection plays a primary role in ulcer formations has not been proven. The different forms of medical treatment for ulcers are given in detail. According to Sippy approximately 75 per cent of all cases of pyloric obstruction due to ulcer disappears within the first three weeks under the management described. Altho cures have been reported for each of the popular surgical procedures, it is doubtful whether the results obtained have been any more satisfactory than those following any of the conservative medical treatment when thoroly and conscientiously followed out. Constipation proper, so-called, is always a functional disorder of the intestines. Three chapters are devoted to its treatment. The volume is illustrated by many instructive roentgenograms. This is a valuable book for all who practice internal medicine.

SMITH.

Management of Diabetes. Treatment by Dietary Regulation and the Use of Insulin. By George A. Harrop, Jr., M.D. Associate in Medicine, College of Physicians and Surgeons, Columbia University, etc. Introduction by Walter W. Palmer, M.D. Bard Professor of Medicine, Columbia University. Cloth, 175 pp. $2.00. Paul B. Hoeber, Inc. New York. 1924.

This little book is the result of a postgraduate course given to 600 physicians at the Presbyterian Hospital, N. Y., on the treatment of diabetes and is a most excellent summary of present day management of diabetes by diet and insulin. The subject has become confused by the reading of a great mass of new and undigested material and by the enthusiasm of investigators in overemphasizing their particular fads. The author does not agree with Joslin concerning the use of sodium bicarbonate in coma but recommends it. The question of diagnosis in glycosurias is considered. The writer points out the frequency of cardiovascular complications in diabetes and also of nondiabetic glycosuria in hypertension. The latter cases are very interesting and the glycosuria is not dependent on carbohydrate diet or an excess of blood sugar. The reviewer has seen such cases, in which the diagnosis of diabetes had been made b many different physicians. This is a very desirable contribution in summing up in concise form the many additions to recent treatment, especially the method of using insulin and its indications.

WINSLOW.

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A Textbook of Pharmacology and Therapeutics. By Arthur R. Cushny, M.A., M.D., LL.D., F.R.S. Professor of Materia Medica and Pharmacology in the University of Edinburgh. Eighth Edition, Thoroughly Revised. Cloth, 707 pp. Lea & Febiger, Philadelphia and New York. 1924.

In this new edition the distinguished writer has made many additions and changes, notably in respect to digitalis, ergot, the cocaine group, quinine, thyroid and pituitary glands, and strychnine. The matter pertaining to the action of digitalis is particularly admirable in connecting its pharmacology with clinical uses. Cushny notes Eggleston's dosage as 2 drams of the tincture followed by 15 minims t.i.d., until physiologic effect is obtained. Eggleston found that 5½ drams produced the physiologic effect in a 150-pound individual and that this amount might be given within twelve to eighteen hours, if the reviewer is not mistaken. Cushny states that the usual method is to give 15 to 20 minims t.i.d. but the common clinical practice in this country is to give a dram of the tincture twice or thrice in twenty-four hours in hospital cases until slowing of the heart or untoward symptoms occur in auricular fibrillation.

The author describes the proper method of giving quinine in heart cases and the work is as thoroly up-to-date as it is safe to be. If one adopt new remedies too soon, he may live to sorely regret it.

Cushny is probably the highest authority in pharmacology and he possesses the faculty of presenting the subject of the action of drugs in a scientific and at the same time simple, logical and lucid manner. His authority rests on original investigations and he, like Osler, after establishing his reputation in this country at Ann Harbor, has been called to higher spheres abroad.

WINSLOW.

Science and Art of Anesthesia. By Col. William Webster, D.S.O., M.D., C.M. Professor of Anesthesiology, University of Manitoba Medical School, etc. Illustrated. 214 pp. $4.75. C. V. Mosby Co., St. Louis. 1924.

Thoroly covering the essentials of proper anesthesia, this small volume should be in great demand by students and beginners in anesthesia, for whom it has been written. The author shows a comprehensive knowledge of the subject and writes pleasingly. Dr. John Lundy's "Seattle Model" Gwathmey is illustrated in connection with the chapter on ethylene.

MILLINGTON.

Cancer of the Breast with a Study of 250 Cases in Private Practice. By L. Duncan Bulkley, A.M., M.D., Senior Physician to the New York Skin and Cancer Hospital, etc. 40 Illustrations. Cloth. 326 pp. F. A. Davis Co., Philadelphia, 1924.

Few problems in medical investigation are exciting as much interest as the problem of the causation and cure of cancer. Investigations devoted exclusively to it are carried on in a number of the clinical centres of the country, and the results, positive findings or suggestive indications are passed thru their clearing house for the benefit of all. This, and the efforts of a lay organization to promulgate whatever positive knowledge we have among the laity, are perhaps responsible for the many ill advised and often ephemeral claims of cancer cure. Perhaps the author of this book may have something of positive value in his contention that carcinosis is due to faulty metabolism, but if so, there is scant evidence of it in his books, surely not suffcient to warrant his casting doubt upon the relative values of surgery and radiation. A perusal of his cases is interesting and even suggestive, but the fact that all cases died in which positive diagnosis of cancer was made by microscope, even tho their days may have been lengthened and the condition ameliorated, gives us little solace, particularly since only those cases recovered in which no pathologic specimen was obtained. The book adds nothing to our present knowledge and is interesting only as the vehicle carrying the personal views of the author.

STURGIS.

A Manual of Proctology. By T. Chittenden Hill, M.D. Instructor in Proctology, Harvard Graduate School of Medicine. 85 Engravings. Cloth. $3.25. Lea & Febiger, Philadelphia and New York. 300 pp.

This little manual is a particularly valuable addition to the general practitioner's library. The author, who has had a large experience in the Boston Dispensary, gives his own method of treating the different rectal diseases in a succinct and practical way. With the immense amount of ground to be covered by the general surgeon, this is an especially valuable work for rapid reference, as the advice given on any subject can be taken as tried, sane and practical. The work is on good paper and well illustrated.

CROOKALL.

The Medical Clinics of North America. (Issued serially, one number every other month.) Volume VII Number VI, May, 1924. By Internists of McGill University, Montreal, Canada. Octavo of 305 pages with 49 illustrations and Complete Index to Volume VII. Per Clinic Year (July, 1923, to May, 1924), Paper, $12.00 net. Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company.

This number contains many excellent and instructive reports from the leading practitioners of Montreal. MacKay reports five cases on pituitary dysfunction, illustrating abnormal physiology from disturbances of the pituitary gland and the possibility of relief by suitable treatment. Under the heading of "sciatica pain," Nutter reports twelve cases, illustrating the relationship between pain in this region and various constitutional diseases. Early treatment of poliomyelitis, by Forbes, indicates the possibility of relief from suitable treatment for this condition when properly applied. Lack of space forbids reference to many other instructive reports in this volume.

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Surgical Clinics of North America. Issued serially, one every month.) Vol. IV., No. 2. (Mayo Clinic Number, April. 1924). 295 pp. Per clinic year (Feb., 1924, to Dec., 1924,) paper, $12.00; cloth, $16.00 net. Philadelphia and London. W. B. Saunders Co.

Like all publications from the Mayo Clinic this number presents clinical cases exhibiting the most approved surgical treatment in a great variety of conditions. There are twenty-nine writers, only a few of whom cover more than one report, which illustrates the enormous personnel of the Mayo Clinic. The gastrointestinal tract receives the most attention, eleven reports dealing with pathology in this portion of the body. The genitourinary system is treated under four clinical reports. The text is supplemented by numerous illustrations, as is true of all products from the Mayo Clinic. The full value of this volume can only be appreciated by its perusal.

Hygiene and Public Health. By George M. Price, M.D., Author of "A Handbook on Sanitation," etc. Third Edition, Revised. 306 pp. $2.50. Lea & Febiger, Philadelphia and New York, 1924.

The purpose of this volume is to present the essential features regarding hygiene and public health rather than an attempt to cover the whole field. There are chapters on hygiene in its relations to housing, the child, school and industry. Important facts regarding each of these are presented in concrete and enlightening terms. There are chapters on foods, meats and milk. Sufficient space is devoted to the latter to cover the essential facts regarding prophylaxis and inspection of milk supplies. Infectious and communicable diseases are considered, relative to their prophylaxis and control. There is much information in this volume for one interested in the subject of public health.

Transactions of the American Proctologic Society, Twenty-fourth Annual Session, Los Angeles, Calif. 89 pp. $3.00. Paul B. Hoeber, Inc., New York. 1924,

This volume contains the papers read at the annual meeting of the society. It deals with many important diseases of the rectum, sigmoid and anus. Anyone seeking information of disorders connected with these regions will find much of value in this volume.

PROPAGANDA FOR REFORM

Chologogues—As early as 1868, a British committee appointed to investigate the subject arrived at the conclusion that mild mercurous chlorid (calomel), mercuric chlorid and taraxacum—all reputed chlogogues—do not increase the flow of bile but probably act on the bile expelling apparatus. Recently the latest experimental procedure was applied to judge the status of a number of substances that have at various times been alleged to influence bile flow. With the exception of bile salts, negative results only were obtained with such substances as calomel and salicylates. All dependable evidence warrants the recommendation that clinicians consider the advisability of abandoning therapeutic efforts to "stimulate" the liver through the use of substances having alleged chologogic effects. (Jour. A.M.A., June 7, 1924, p. 1867.)

Gly-So-Iodonate—A few months ago the Council on Pharmacy and Chemistry published a report on an alleged bactericide "Gly-So-Iodonate." The product is put on the market by a company whose name is much more imposing than its importance warrants —"The National Medical Research Laboratories" of Milwaukee, earlier known as the "Wisconsin Medical Laboratories." Charles E. Hutchings, who claims to be a "medical man," seems to have been the prime mover in putting "Gly-So-Iodonate" on the market. Hutchings, in letters, has stated that he is a "graduate of Kings College of London" and has claimed that he is a "member of Marquette Medical College." However, an inquiry directed to Kings College of London brought the reply that they had no record of a man of this name on the medical register. The Marquette University School of Medicine seems to be equally ignorant of Hutchings' connection with that institution. After the Council's report had been published, the National Medical Research Laboratories sent broadcast a six-page circular, three pages of which were devoted to what purported to be a "Partial List of Representative Industries Protecting Their Many Thousands of Employees from Infection With G-S-I." As it seemed reasonable to suppose that a concern which published a misleading formula for its product would be quite as likely to publish misleading references for the value of its product, some of the "representative industries" listed by the exploiters of "G-S-I" were written to. From the replies which were received, it seems evident that the basis for at least some of the references published by the exploiters of Gly-So-Iodonate rests on as flimsy a foundation as the alleged formula of the stuff and the educational claims of Charles E. Hutchings. (Jour. A.M.A., June 7, 1924, p. 1881.)

Exploiting the Cancer Sufferer—The week of the annual session of the American Medical Association was chosen as a propitious time to resurrect two discredited cancer cures. A Philadelphia paper announced that the cause of cancer had been discovered and that a treatment had been evolved which was producing remarkable results. The publicity dealt with the alleged cancer serum of T. J. Glover of Toronto. This received some attention in 1921, but was not shown to be of value. The second "cancer cure" to be resurrected was that of Dr. Wm. F. Koch of Detroit. Koch's nostrum was brought to the attention of the newspapers of the country by one C. Everett Field. It received some attention in 1921, and was reported on unfavorably. The new publicity given to these two discredited "cures" is producing the usual effect. Sufferers from cancer both directly and through their physicians are frantically trying to learn whether there is any warrant for the claims so widely broadcast. (Jour. A.M.A., June 21, 1924, p. 2054.)

Dose of Thyroid for Children—Thyroid effects are generally obtained by the administration of Dried Thyroid U.S.P. (Thyroideum Siccum). There is, however, no fixed dose of thyroid for children. The amount of dried thyroid to be administered must be determined in each case. A safe initial dose for a child three years of age would probably be 0.015 gm. of dried thyroids two or three times a day. The best way is to start with a small dose and to gradually increase it until either satisfactory improvement or symptoms of intolerance manifest themselves. As soon as the desired effects are obtained or symptoms of intolerance manifest themselves, the dosage must be reduced. (Jour. A.M.A., June 21, 1924, p. 2070.)

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ADDRESS

PROBLEMS OF THE STATE ASSOCIATION *

FRED. A. PITTENGER, M.D., F.A.C.S.
BOISE, IDA.

Another year for our State Association has gone into history. In keeping with the mandates of our constitution and with the will of the delegates assembled at Idaho Falls last June, we have gathered here in Boise to receive the reports of our various committees; to transact whatever business you may deem necessary to the conduct of our future welfare; the holding of our scientific sessions; the organization of the House of Delegates; and the election of officers for the ensuing year.

I would respectfully call your attention to our new constitution, which calls for the election of three councillors. These three councillors, together with the president and secretary, shall constitute the State Council and Finance Committee for the House of Delegates. This new constitution calls for the election of these councillors for a term of three years, those first elected to serve for one, two and three years, as may be arranged. In addition to this, the new constitution and by-laws provides that these men shall be presidents of district societies. As I understand the situation, there are but two district societies organized at the present time; however, the document provides that the presidents of the local societies shall be vice-presidents of the district organization. I, therefore, believe that we would be without our constitution by electing a president of a local society.

It further provides that the state shall be divided into councillor districts, and I would respectfully recommend for your consideration that, if the three district plan is adhered to, the northern part of the state constitute a district to include Idaho, Lewis, Nez Perce, Clearwater, Latah, Shoshone, Benewah, Kootenai, Bonner, and Boundary counties; that another district be formed to include Southwestern Idaho and embrace the following counties: Adams, Valley, Gem, Boise, Payette, Washington, Canyon, Cassia, and Twin Falls; that the balance of the state, or the southeast, be the third district, to include Power, Custer, Lemhi, Butte, Clark, Fremont, Madison, Teton, Jefferson, Bonneville, Bingham, Caribou, Bear Lake, Franklin, Oneida, and Bannock counties.

We have endeavored to dispel prejudice, ignorance, greed and indifference. It goes without contradiction that certain new fundamentals have superseded the basis of medicine. The word "health" is a much abused word. The dictionary or encyclopedia defines this word as a condition of physical soundness or commonly understood by the laity as freedom from disease. It is more than this,

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* President's Address, read before the Thirty-second Annual Meeting of Idaho State Medical Association, Boise, Ida., June 20-21, 1924.

and the new term "public health" is being recognized every day by leaders in a majority of organizations, and especially by large interests and life insurance companies as a duty of service to their patrons, employees and policy holders. This new movement assists science in a small way to reach the individual. For public health, or the health of the community, depends upon the health of the individual.

This new movement is built upon the foundation of medical science, and is but a beginning. Our members have assumed the lead, for they have first-hand knowledge and training. We must carry the torches of progress and fasten firm the beacon lights of truth. We must do this to eradicate superstition, cultism, fadism, traditions, and every other false conception pertaining to health in all its forms.

People do not like to hear the truth. For this reason we are compelled to outline a persistent campaign looking far into the future. All information along health lines should be accurate and scientific and given from its source in language that can be understood by every one. This information should contain no propaganda, should not try to convert, but set up scientific truth as a guide.

A majority of the papers of this state are publishing articles pertaining to public health and thereby enlightening the people of this state in matters of health. I would be ungrateful and feel that this report to you would be incomplete, if I failed to make mention of this outstanding assistance and friendly cooperation of the Idaho newspapermen. And without them our most strenuous efforts to proclaim the gospel and explain the virtues of public health, the prevention of disease, and the prolonging of life would have resulted in little. The Idaho editors have been patient, kind and considerate. They have all kept their word and have been our strongest reliance in carrying the message of health to the people of this state. To these men, on behalf of truth and science, I extend my hand in highest appreciation of their unselfish service.

We have made some headway with our organization, but the machinery and organization of this Association is cumbersome. We do not have the necessary cohesion. There is too much individualism existing at present. I do not make these statements on the spur of the moment, or in criticism, but only after acting as president of this organization. Regardless of this fact, practically every other state medical society labors under the same handicap, with but few exceptions. Let us profit by their experience. To remedy the present condition, I would respectfully submit for your consideration the appointment of several committees to study our different problems. Some may call them contact, liaison, survey, or organization committees. I think they should be appointed for, say a three-year period, one new man appointed each year, or in the event a man should make good he could be reappointed, the committee being so arranged that a new appointment or reappointment can be made each year. The committees should not be large, say three members. All members should be appointed from the same section, but not necessarily from the same town. This would allow them to meet every three or four months. Like committees should be appointed in the county organizations.

I suggest that these committees be named and handle the matters coming under their jurisdiction as follows: "Tuberculosis," "Cancer," "Social Hygiene," "Conservation of Vision," "Health Problems in Public School Education," "Hospital Standardization and Survey," "Child Welfare," and possibly a larger one to be known as a "League Contact Committee." These committees should be active, accumulating data, making surveys and contacting national organizations, working along the same line. These committees should be under the supervision of the State Association Council, and the information obtained should be dispersed frequently to all county and local units and to the public. It should be filed with the Secretary of the state organization, where it will be available to the entire membership and for future use. For it will only be thru a compact organization of this kind that we will be able to keep apace of lay organizations which have assumed the leadership along these lines.

In this state we have a wonderful organization in the Public Health League. When it is considered what this organization has accomplished under the handicap of lacking the support of a united profession, it can almost be classed as marvelous. This is a militant organization, fighting your battles 365 days a year. The committees outlined above would be the backbone of the League. I would, therefore, suggest that a closer cooperation be worked out between the two organizations. I would go so far as to suggest that the League and the Association be combined, with the Executive Secretary of the League acting as Executive Secretary of the Association. This would require an amendment to our Association constitution and would also require us to raise its dues. Under this arrangement, all members of the Association would be members of the League. This would give the League a more permanent standing, as well as giving us a full-time man on the job to handle Association matters.

This idea of an Executive Secretary for an Association is not a new one, as several eastern cities have already adopted this idea. By this consolidation I sincerely believe that we can accomplish a greater good for the profession and at the same time revitalize our Association. In this day, when everything is organized, we must make plans for the future. I earnestly and sincerely hope that you will give this matter your serious consideration.

The first pledge of this society should be *service*—service to its members and service to the public. We have fulfilled that pledge, so far as possible with the present machinery. If an organization does not render service, it will cease to exist. "He profits most who serves best." Those who would lead, must take thought as to their own actions and their own business, of professional code and conduct, and of their acts and policies. You must be your own critic, tho avoiding criticism from the outside. By following this principle, we develop loyalty.

We of this organization adhere to that doctrine that man's greatest happiness is to be found in health. Health includes in its broadest conception all functions of government, since there is nothing from finance to municipal playgrounds which is not founded on health. We are indeed happy to have been of service to suffering mankind. Thru this service we will advance.

Cabot, in commenting on Service in his book, "What Men Live By," says: "Assuming that in everyone there is an infinite and restless desire to get into the life of the world—share any and all life that is hot and urgent or cool and clear—we can tackle this infinite task in two ways:

"By trying to understand the universe in the samples of it which come to our ken, and to draw from these bits of knowledge which typify and represent the whole. That is science.

"By trying to serve the world (or to understand it) we touch what is divine. We get our dignity, our courage, our joy in work, because the greatness of the far-off end always in sight, alwaysattainable, never attained. Service is one of the ways by which a tiny insect like one of us can get a purchase on the whole universe. If we find the job where we can be of use, we are hitched to the star of the world, and move with it."

ORIGINAL CONTRIBUTIONS

THE HISTOGENESIS AND NATURE OF ARTERIOSCLEROSIS *

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I have chosen the subject of arteriosclerosis not only because it occupies a prominent position in modern medicine, but because it illustrates singularly well the intimate relations between physiologic and pathologic processes, and because it may be explained and understood on a basis of fundamental physical principles. Thus arteriosclerosis is one of the few pathologic lesions, in which the exact casual connection may be established without resource to hypothetical conceptions or theoretical assumptions.

A few introductory words on the anatomic-physiologic side are primarily due. All larger arteries possess in the adult three coats—an intima, a media and an adventitious sheath. The intima again consists of an inner lining of endothelium and a subendothelial elastic and connective tissue layer. This connective tissue possesses characteristic stellate (intimal) cells which lie in the intercommunicating system of canals. The elastic tissue is abundant. The relation between the lining endothelium and this subendothelial connective tissue is very intimate thru endothelial cell processes. The boundary between intima and muscular media is, in large arteries, sharply marked by the internal elastic membrane, except in the aorta. Less sharp, but still definite is the separation between media and adventitia by the external elastic membrane. The muscular media also contains elastic fibres, and this elastic fibre content is pronounced in trunk arteries. The adventitia is made up of fibrous connective tissue and carries the vasa vasorum which enter the adventitia obliquely. Vessels without vasa vasorum are directly nourished by the blood contained in them.

Very important and of direct bearing on the nature and development of arteriosclerosis are the changes which occur in the arterial wall after birth and steadily progress with the various age periods. These depend on certain histomechanical laws which have received a thoro study by Thoma. Accordingly, the thickness of an arterial wall, more particularly of the intima, depends upon two factors: First, the velocity of the blood current, more particularly of the peripheral zone of the blood stream (that is the blood in intimate contact with the intima); second, upon the elastic tension of the vessel wall. In other words, there is a definite physical relation between the arterial wall and the circulating column of blood, and alterations in this relation—either on part of the wall itself, or on part of the circulating column—lead to structural responses on part of the vessel wall.

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Now it is a well recognized physical law that in any system of pipes of variable section the pressure will be greatest where the cross section is greatest and the velocity of the circulating fluid is least. In other words, any agent which dilates parts of a vessel, while leaving it intact elsewhere, or any condition which retards the velocity of the blood current in a given district, gives rise to increased tension over this area. But such increased tension is followed by stretching of the elastic muscular tissue of the vessel wall, and leads, therefore, just as in hypertrophy of skeletal muscle, to hypertrophy of this elastic muscular tissue until the point of functional compensation has been reached, in other words, until the physical relation between the arterial wall and the circulating blood column has been reestablished.

Such disturbances arise under normal conditions, for example, in the umbilical district as result of closure of the umbilical artery and of the ductus Botalli immediately after birth. Immediately after birth the umbilical vascular bed becomes too wide, from a reduction in blood volume which in a given unit of time circulates thru the descending aorta and the common iliacs. This is, as Thoma has shown, responded to by tonic contraction of these vessels, which, however, is insufficient on account of the diagonal-fascicular construction of their media. This necessitates stretching of the intima, and the latter thickens. These two, that is tonic contraction plus compensatory thickening, reestablish in from two to five years normal velocity in the peripheral zone of the blood curernt in these districts.

From this standpoint the physiologic age period changes, which occur in all large arteries, appear of considerable significance. These are strongest in expression in all those districts which are most exposed to the effects of wear and tear, that is, to stretching of the walls and variations in velocity of blood currents. Consequently, there takes place normally in all large arteries a progressive intimal hyperplasia thru stretch of their elastic fibrous elements. This is most pronounced in the aorta, but also noticeable in all other trunk arteries. The intima of the aorta thus divides itself, as Jares has demonstrated, with advancing age into three layers, the outer elastic muscular, the elastic, and the inner subendothelial elastic tissue layer. In other arteries the separation of the hyperplastic elastic fibrous intima from the media is more easily recognized.

This physiologic intimal hypertrophy advances, according to my observations, with unequal rapidity in different individuals to about the fifth decade. After fifty it is not apt to assume greater dimensions, so that in later life, that is at about seventy years, but in some persons earlier, the intima of large arteries, as for example in the radial may be even under normal conditions nearly as thick and thicker than the media which may then appear atrophic.

Microscopically this physiologic intimal thickening is accomplished mainly thru the formation of new elastic lamellae, which seem to split off from older thickened elastic fibres. Thoma believes that new elastic elements arise immediately under the endothelium. Later introduction of connective tissue fibres separates this subendothelial layer and splits it into new laminae.

One is at once struck in this review of normal evolutionary changes with those of arteriosclerosis. Indeed so close is this connection that the arteriosclerotic changes appear only as an exaggerated physiologic performance.

The term arteriosclerosis was first introduced by Lobstein in 1833. Förster in 1873 introduced the name artheroma which, however, is only applicable to the later stages of arterial softening and disintegration. Marchand, therefore, speaks of atherosclerosis. Virchow regarded it as endarteritis chronica nodosa deformans, a view no longer held, since it is plainly not an inflammatory process.

Here also we observe first a strong intimal thickening which is due to the abundant, exaggerated formation of new elastic lamellae with an increase in fibrous connective tissue. Favorite places for this occurrence are points of acute arterial branching, where strongest pressure and pressure differences may be expected. The later stages of the lesion which are essentially represented by fatty disintegration and dissolution of the excessively hypertrophied intima, and sometimes extend to the media, are nutritive disturbances which follow here, as in other excessive hypertrophies, upon exaggerated tissue proliferation. Thus atheromatous softening and defects occur. The same holds true of the final calcification, which simply consists in a physical adsorption of calcium salts from the blood to the fatty necrotic tissue remains.

In other words, it appears that the arteriosclerotic process is, like arterial ageing, an expression of adaptation in relations of blood column and current to the arterial wall. It differs from the normal age period changes not fundamentally, but only in exaggerations. We may find its immediate cause also in abnormally great distension and stretching of the vessel wall, as result of either an inherent hereditary weakness of its tone, or from excessive pressure effects on its elasticity, finally from both.

A great deal of discussion was formerly spent on the question whether arteriosclerosis is primarily of intimal or medial origin. It is perfectly evident, however, that constant overstretching of an arterial wall will involve all its contractile elastic and muscular elements, that is, intima and media. But inasmuch as we are dealing in vessel walls, not with a static, functionally equal structural unit, but with several layers of different tissues, of uneven thickness and elastic power, which for structural reasons is greater in the media than the intima, it follows that the effects of distension or stretching are first felt and responded to by the intima. And it is on the intimal surface that the effects or changes in velocity of blood current and pressure are greatest. Elastic and connective tissue hyperplasia in the intima is, therefore, the first and most characteristic event of the arteriosclerotic process. This hyperplasia continues, as Thoma has pointed out, until the relations of the blood stream to the vessel walls have once more reached their proper level. But when the constantly increasing loss of vascular tone prevents this, it becomes quite irregular, more and more excessive, and extends into the media. Thus, as in any excessive hypertrophy, nutritive changes overtake it and disintegrate the arteriosclerotic parts.

There is, therefore, a certain pathogenetic similarity between muscular hypertrophy and arteriosclerosis. In both occurs hypertrophy from stretching of elastic elements. But in muscle the tone is primarily preserved and only suffers later. In the production of arteriosclerosis, however, the intimal hypertrophy already indicates an excess over the physiologic adaptation of the various age periods. In other words, it is caused by a persistent decline or loss of tone, and thus reaches relatively early loss of compensation. The place of the hypertrophied normal tissue is then reinforced by connective tissue which only for a time is able to compensate the pathologic excessive strain. Ultimately it suffers equally with the declining elastic muscular elements thru regressive disintegration.

Thus arteriosclerosis is bound up with age and occurs wherever wear and tear show their greatest effects. It is more frequent in the plethoric, strong man; it is hardly ever found in anemics and cachectics and it is common in persons afflicted with diseases which are associated with high blood pressure.

It is necessary that in the study and analysis of the arteriosclerotic process cognizance be taken of certain related lesions of the vessel wall which have quite a different etiology and histogenesis and must be separated from it. These are, first, toxic arterial degenerations, which owe their origins to the effects of bacterial or other poisons (adrenalin) on the medial coat of blood vessels. Their effects are shown by necrosis in the media of greater or lesser extent, and these necrotic patches later calcify. The medial degeneration and calcification is here distributed in transverse streaks, which gives to the inner surface of larger arteries a characteristic striated appearance. These cases, commonly referred to as Mönkeberg's sclerosis, may show in addition to the medial necrosis, inflammatory cell infiltrations in adventitia and media. They must, therefore, be separated definitely from genuine arteriosclerosis and really represent results of infections. They stand already on the border line of inflammations, altho they may on account of their weakening effect on the vessel wall combine with arteriosclerotic changes. Thus result necessarily complicated histologic pictures, which are in later stages difficult to analyze.

The second group of arterial changes, which has to be strictly separated from arteriosclerosis, is of genuine inflammatory character and is most exquisitely represented by the syphilitic infection of the arteries. It was an important forward step in our knowledge of the disease of arteries when Heubner, Koester, Heller, Doehle and their coworkers separated the syphilitic lesions of arteries from others, notably arteriosclerosis with which they had been formerly identified, and demonstrated that syphilitic infection of blood vessels, like other inflammatory lesions, has a characteristic uniform pathogenesis and histogenesis.

The syphilitic arteritis takes its origin in larger vessels in and around the vasa vasorum of the adventitia, in the form of at first patchy, then spreading perivascular syphilitic granulation tissue. This extends to and invades the media in form of patchy and streaked infiltrations, and, therefore, leads to corresponding necrosis of the invaded medial tissue. It is, therefore, spoken of as a syphilitis mesarteritis. Extension to, and inflammatory involvement of, the intima is rare in trunk arteries, while it is the rule in middle sized and small blood vessels. There it leads to a productive syphilitic endarteritis which narrows or obliterates the vascular lumen.

If we trace these events in somewhat greater detail, we observe as first noticeable evidences of syphilitic infections in larger and middle sized arteries, swelling and proliferation of the endothelium of the vasa vasorum. Thus their walls thicken and undergo hyaline fusion. Coincident is an, at first localized, then spreading perivascular cell infiltration, composed of plasma and lymphoid cells. These cell aggregates may take on the appearance of typical gummata, or they may retain the simple character of a small round cell, partly vascularized, granulation tissue. Thus occurs streaky extension towards and into the media. Its path presents invariably necrosis of the invaded elastic muscular elements and replacement by scar tissue. Thus the media is permeated by contracting scars and the vessel wall correspondingly deformed. The intimal surface is made irregular and puckered from scar retraction towards the media. In pronounced cases the extensively thickened and infiltrated adventitia may surround larger trunk arteries in form of a thick pearly white mantle.

Note here the marked difference in nature and histogenesis from arteriosclerosis. The course of events is from without inward, not as in arteriosclerosis from within outward. Moreover, the morphologic changes do not simply consist in a tissue accommodation thru enlargement and increase in its elements, as in arteriosclerosis, but are spreading inflammatory expressions of the effect of an irritant, which is conveyed to the parts in and around the vasa vasorum. Consequently, the histologic changes are in syphilis much more destructive to the arterial wall, and the weakening effects in the syphilitic infections on the arterial wall contrast strongly with the support which elastic fibrous additions to the intima furnish in arterios-lerosis.

Thus syphilitic arterial changes are much more dangerous to the arterial wall and lead to the well known consequences of aneurysm and rupture with much greater ease than those of arteriosclerosis.

EARLY RECOGNITION OF HEART DISORDERS *

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The importance of early recognition of heart disease is apparent because of its frequency, prevention, prognosis and proper treatment.

Frequency. According to the last census, deaths from circulatory disease are more numerous than from any other cause. Twenty-five per cent of patients in large hospitals are cardiacs; 2 per cent of the population in the United States are affected, or two and one-half million; 200,000 school children have heart disease. Of 550,000 young men rejected for military service 10 per cent were cardiacs.

Prevention. Preventive measures have already been applied in circulatory disease thru intensive study of large groups of cardiac school children. Heart disease in children and adults is often insidious. A child may have rheumatic fever with no apparent heart involvement. Some time later a murmur is found, showing that damage had occurred, and some months or years later undoubted valvular disease is evident, accompanied by cardiac failure. In adults physical signs of heart failure may appear before any subjective symptoms. The recognition of these signs and symptoms of incipient heart failure is imperative. The life history of heart disease, with its tendency to recurrence, producing the cardiac cripple, shows that removal of foci of infection, regulation of physical activity and occupation, with little physical strain, may make the cardiac self supporting instead of a burden upon the community. The physician should be alert to the fact that every case of rheumatism in children or young adults is one of potential heart disease. Mackenzie emphasized the opportunity of the family physician in detecting the early stages of chronic disease; thru years of close acquaintance he may observe the progressive stages in its development.

Heart failure should be detected at its onset, long before obvious signs of broken compensation appear. The early symptoms may be slight or moderate, shortness of breath with ordinary exertion, such as climbing stairs, walking against a brisk wind or climbing a 'moderate incline.' Sometimes early heart failure manifests itself first as a digestive symptom, with distress in the epigastrium after a hearty meal and exertion, or a feeling of "gas" in the stomach, not relieved by belching. Examination shows a large, tender liver due to passive congestion, and the heart borders are found increased. Again, the first symptom may be troublesome cough, and not infrequently bloody sputum, so that the patient is fearful of tuberculosis. This condition is not at all uncommon in association with old mitral stenosis which may have been well compensated for years.

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* Read before the Fiftieth Annual Meeting of Oregon State Medical Society, Portland, Ore., May 27-29, 1924.

In two of my patients, acute pulmonary edema was the first symptom pointing to a heart working under strain; in one, a man of 42, always well and vigorous, it came with moderate overexertion and in the other, aged 65, a man with arterial hypertension of some years duration, and marked arteriosclerosis, it came after exposure to cold and fatigue. In other cases, the first symptoms pointing to a cardiac breakdown may be anginal pain, moderate or severe. Almost constant factors in angina are its association with exertion (or excitement) or exertion after a hearty meal.

In many patients definite physical signs of heart disease may be detected before subjective symptoms appear. One of the earliest, in my experience, is found on examining the bases of the lungs posteriorly. One obtains a shower of fine rales at the end of deep inspiration, due to early passive congestion.

Another early sign is liver enlargement. Or the heart borders may be found to be increasing from gradual cardiac dilatation. This may be the result of a gradual rise in blood pressure, and tho the heart hypertrophies in its attempt to meet the increased demands made upon it, it finally dilates and fails.

In 100 cases of early heart failure in patients of varying ages, and with varying etiologic factors, the following symptoms were noted first:

Dyspnea on moderate exertion	91
Palpitation and arrhythmia	66
Pain on effort or after hearty meal	50
Dizziness	40
Cough	31
Gastrointestinal symptoms	19
Pulmonary edema	10

In the same series of patients the following frequency of physical signs, singly or combined, is shown:

Heart enlargement	74
Albuminuria	38
Edema	17
Liver enlargement	9
Arrhythmia	36

From the foregoing it is seen that Mackenzie's definition of heart failure is evident—"the heart is unable to maintain an efficient circulation during the effort necessary for the daily life of the individual." This definition applies to beginning and advanced heart failure, but in the instances cited failure has been early. It should be emphasized that it is heart muscle that is at fault.

Factors concerned in heart failure. Of these the most important are (1) the past history, including rheumatism in childhood, heart damage from severe infections such as pneumonia, influenza, scarlet fever or diphtheria; syphilis; cardiac strain from occupation, athletics or long continued high blood pressure.

(2) Age and type of lesions. The heart lesions vary greatly in childhood, youth, middle and old age. (a) In youth there may be evidence of earlier heart damage as shown by mitral insufficiency, but with efficient heart muscle. In such a case one must always be on guard as to the possibility of mitral stenosis, a much more serious lesion, for it is a gradually narrowing, progressive process, while insuffiiency of the mitral valve is a healed process. Another thing to guard against in the interpretation of heart murmurs is the systolic murmur over the aortic area. Organic aortic stenosis is a rare thing. Aortic systolic murmurs are not uncommon in association with arteriosclerosis; it is not aortic stenosis but sclerosis of the aorta above the valve.

Lewis and others have emphasized the importance of diastolic murmurs in the heart as the only ones of any importance. It is obvious that progressive scarring of the mitral valve in mitral stenosis on the one hand, or the great disadvantage at which the heart has to work with aortic insufficiency, on the other hand, are much more significant than mitral insuffiency (the least serious of valvular lesions), or the lesion producing an aortic systolic murmur, referred to above. Modern authorities are, therefore, much less inclined to interpret heart failure upon the basis of murmurs than upon the condition of the heart muscle, upon which all depends.

(b) In middle age heart weakness may be traceable to the factors above referred to, but perhaps one of the most important is that of underexercising and overeating. Gradually increasing arterial thickening with hypertension and kidney involvement may be evident. Men, formerly athletic, become sedentary. Coronary thrombosis not infrequently occurs.

(c) After middle age the process in the circulatory system in a degenerative one, most often associated with arteriosclerosis, in which the heart is involved, or is frequently associated with heart strain, secondary to long continued arterial hypertension.

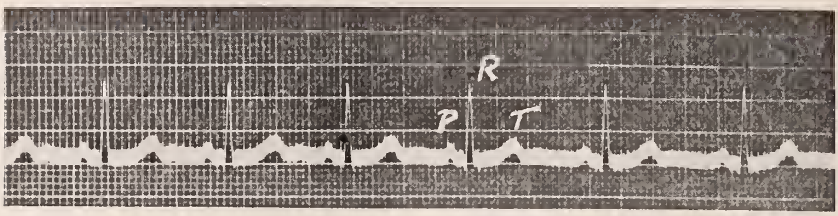

Fig. 1. Showing normal electrocardiogram for comparison with fig. 2.

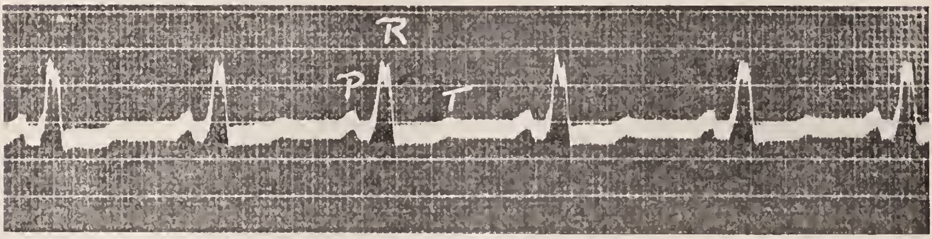

Fig. 2. Electrocardiogram from case 1, group 3, subacute bacterial endocarditis. The wide split R wave indicates disturbance in the right branch of the conducting pathway. Note the width, 4-25 (0.6) seconds, as compared with the normal 1-25 (.04) seconds.

Since the factors governing heart failure vary so greatly with age and past history the following typically illustrative cases are cited:

Group 1. Early heart failure in childhood. Moderate heart failure due to subacute bacterial endocarditis secondary to follicular tonsillitis. Heart failure manifested by tachycardia, cardiac dilatation, moderate liver enlargement, slight cyanosis. Gradual improvement, becoming afebrile, circulation reestablished. Tonsillectomy, severe cardiac emergency as shown by tachycardia, cardiac dilatation, dyspnea, cyanosis; prompt response within two hours and gradual recovery. After five weeks up and about and with only slightly restricted activity.

J. H., age 6. About ten days after acute tonsillitis, remaining febrile, the family physician noted overacting heart, with a soft, tho definite systolic murmur at apex. The boy had never had any serious illness and the physician was sure this was of recent development. Further examination showed the left border of the heart one-half inch outside its normal limits in the sixth interspace, a soft, definite, blowing systolic murmur at the apex. Temperature 101°, pulse 130, marked sinus arrhythmia. The liver was felt two finger breadths below the costal margin in the mammillary line, slightly tender. There were no joint symptoms. The tonsils were moderately enlarged and cryptic. The tonsillar glands were just palpable and slightly tender. There were a few small petechial hemorhages in the conjunctivae of the lower lids. No other petechiae. The spleen was just palpable. The patient improved steadily on salicylates and moderate amounts of digitalis and, being afebrile, was allowed restricted activities. After three weeks tonsillectomy was done with no trouble, but about five hours later the pulse became rapid, the heart dilated and for a time the patient's condition was serious. Response to stimulation was satisfactory and now, five weeks after, the patient is well.

Group 2. Early heart failure in youth.

A dental student, of 24, was troubled with palpitation, irregular heart action, some cough with bloody sputum on over exertion, recent limitation of effort. Six years ago had tonsillitis, mumps and influenza which led to rheumatic fever, confining him to bed for weeks. Recovery was gradual over a period of five months. His heart trouble dates to that time. Examination showed the left heart borders increased one inch in the sixth space. Precordial pulsations were marked. At the apex, a rough, blowing systolic was heard, at the sternal border in the fifth left space a diastolic murmur was also definite and at the aortic area a rough diastolic murmur was distinct. Blood pressure was 160-45.

Comment. In a young man, previously well, heart disease with moderate failure dates to infection and rheumatism, producing endocardial lesions of the mitral and aortic valves. To the present there have been no serious cardiac breakdowns, due, no doubt, to the oung heart muscle. Preventive measures will do much to avoid recurrences.

Group 3. Beginning heart failure in adults.

Case 1. A woman, of 37, the mother of five small children, came to the cardiac clinic at the Free Dispensary, complaining of precordial distress and shortness of breath on ordinary exertion. She had fever of 99.5°; there were some petechiae in the conjunctivae, the liver was enlarged, she was slightly cyanotic. The heart borders were increased to the left anterior axillary line; there was a rough systolic murmur at the apex and one of different pitch and intensity at the aortic area. She gave a history of rheumatic fever two years before, when she was in bed for some time, and many joints were involved. Blood culture showed pure streptococcus viridans. On salicylates and small doses of digitalis she improved rapidly and was quite relieved of heart symptoms within three weeks. Now, four months since first seen, she has no fever and blood cultures are negative. Her heart is compensating well.

Comment. This woman probably developed endocardial lesions at her former attack of rheumatism. The recurrence was preceded by tonsil infection, and streptococci were found in blood culture. The picture is that of subacute bacterial endocarditis. To prevent her from becoming a cardiac invalid is important. Tonsillectomy should de done, and she should be kept under observation for months to prevent recurrences and to safeguard her heart. Salicylates are almost specific in such cases, controlling fever, relieving joint pains, and probably are bactericidal. Myocardial damage was well marked in this, Case 1 (Fig. 2) as shown by the electrocardiograms.

Case 2. A vigorous athletic man, of 42, gradually developed an increasing arterial hypertension, with traces of albumin and few granular casts in the urine. After rather strenuous exercise he had an attack of moderate pulmonary edema, with dyspnea, frothy, blood-tinged sputum and mild precordial distress. From this time on symptoms of failing heart muscles developed and he died a cardiac death three months later.

Electrocardiograms showed undoubted myocardial disease similar to that in the preceding case.

Case 3. An athletic man, of 50, former football player and coach had increasing dyspnea for two years, recently so troublesome that walking a few blocks produced great discomfort. Repeated attacks of quinsy sore throat but never laid up with rheumatism. Heart examination showed enlargement of left border to anterior axillary line, vigorous, tho irregular, heaving precordial pulsations. Undoubted mitral insufficiency and aortic insufficiency. Blood pressure 125-40. Electrocardiograms showed auricular fibrillation with marked auriculoventricular dissociation. There was no history of syphillis and repeated Wassermanns were negative.

Group 4. Early heart failure past middle age.

Moderate heart failure in a man of 68, causing limitation of effort for some months before seen. Moderate arteriosclerosis, liver enlargement and kidney involvement, culminating in a serious attack of pulmonary edema with much frothy blood-tinged sputum, dyspnea, auricular fibrillation and prostration.

Now, one and one-half years after this attack, is able to attend to his business and feels well except for dyspnea and palpitation on overexertion.

The cases cited illustrate heart breakdown in its incipiency. One is struck with the ability of young or youthful hearts to withstand repeated breakdowns.

Estimation of heart efficiency. Tho many efforts have been made to devise methods of estimating the power of the heart, a simple test is desirable. Moderate exertion with dumb bells or hopping is sufficient. The normal heart speeds up under such effort, but there is no marked dyspnea or discomfort, and the heart rate falls to normal in a short time. The heart that is subnormal, however, responds by marked increase in rate and there are associated symptoms of strain, as shown by dyspnea, anxiety and general discomfort.

The heart sounds may be helpful in estimating heart function. A flapping first sound at the apex, of poor quality, may indicate weak heart muscle. Such a person has obvious distress on exercise. It is most common in the middle aged but should not be confused with the distant heart sounds in the emphysematous.

The object of this paper has been to emphasize the prevention of heart failure by early recognition of heart involvement thru early symptoms and signs.

SYPHILITIC AORTITIS AND ITS COMPLICATIONS *

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My reason for presenting a paper on this subject is because of the very great frequency of syphilis as a cause of cardiovascular disease and the fact that it is so often unrecognized in its earliest attack upon the circulatory system. It is stated that cardiovascular syphilis is found in from 4 to 7 per cent of autopsies in a general hospital, that it accounts for from 15 to 25 per cent of organic heart diseases, and is found present in from 50 to 75 per cent of syphilitics. In view of these statistics every syphilitic must be considered potentially a subject for cardiovascular disease. As a basis for further discussion I will now present the histories and physical findings in four cases.

Case 1. H. W. S., age 51, married, engineer. Family history negative. Present history: Twenty years ago severe illness, diagnosed as myelitis, characterized by severe pain in the legs and bilateral paralysis of the legs. Illness of prolonged duration and eventually cured by iodide of potassium. Pneumonia in 1913, influenza in 1922. No history of gonorrhea or syphilis.

Present illness: Comes now complaining of pain in the lower lumbar region for some months and numbness of the first and second fingers of right hand. Several x-ray plates have failed to reveal anything wrong with the vertebrae.

Physical examination: March 27, 1922. Good nutrition, pupils react to light and accommodation, throat negative, no goiter. Blood pressure 138-100, no thickening of the radials, lungs normal. Heart, area normal, no appreciable dullness over manubrium, sounds clear, no murmurs; aortic sound is quite accentuated and has a very slight suggestion of a "bruit de tabourka." Abdomen negative, knee jerks present and equal, no edema. A well marked exostosis over the middle third of left tibia, no general glandular enlargement, no scar on penis.

Laboratory findings: Hgb. 95 per cent; r.b.c. 4,900,000; w.b.c., 6.400, differential count not made. Urine 1022, acid, albumin negative, sugar negative, no casts. Wassermann one plus except by the ice box method which showed three plus. X-ray showed a moderate dilatation of the aorta.

Diagnosis: syphilitic aortitis.

The facts from which this diagnosis is deduced are aortic second accentuated, moderate diffuse dilatation of the aorta under x-ray, presence of a mild Wassermann reaction, history of illness twenty years ago which has left an exostosis of the tibia.

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* Read before King County Medical Society, Seattle, Wash., April 21, 1924.

Case 2. H. M., landscape gardener, age 41, married, presented himself at the office on Oct. 16, 1922, with the following history: For the past four years has had dizziness at times and now complains of thumping of the heart, choking sensations and dyspnea for the past six months, no cardiac pain.

Family history is negative as well as the past history. No history of syphilis or gonorrhea could be elicited. Is the father of six healthy children and wife has had no miscarriages.

Physical examination: Marked pulsation of all visible vessels, pulse corrigan type, capillary pulse, blood pressure 190-60. Heart: impulse heaving and forcible, apex beat is in the sixth space, five and three-fourths inches to the left of the median line, submanubrial dullness, marked pulsation in the suprasternal notch. Over the aortic area is heard a systolic and diastolic murmur, also a systolic murmur at apex, pistol shot sound in the femoral, also a to and fro murmur. Lungs, negative. Liver not enlarged or tender. Reflexes both pupillary and patella present. Wassermann four plus.

Diagnosis: Syphilitic aortitis, aortic regurgitation, relative mitral insufficiency.

I regret that an x-ray was not taken, as I planned to do this the following day but the patient failed to return, due I believe to his doubt of the diagnosis, especially as to the etiologic agent. He passed into other hands and on to the hands of his Maker about six weeks subsequent to his visit to my office.

Case 3. W. S. P., age 50, manufacturing agent, first came under observation the latter part of August, 1921, with the following history: About a month previously, while out on a motor boat cruise, he had occasion to get up the anchor in a hurry and in doing so slipped on the wet deck, wrenching his back. Since that time, in spite of various forms of treatment, baking, massage, etc., has had severe pain in the back, radiating around to the left side of the chest. On account of this history only a local examination was made and the back strapped. This gave a certain degree of relief for a time but not as much as anticipated. The pain continued and the patient commenced to complain of accumulation of gas in the stomach and pain after eating. A complete examination then was negative, with the exception of a metallic accentuated aortic second.

On the basis of this finding and of this finding alone a Wassermann was done and proved to be four plus. There was a total absence of any history of lues, tho the patient said he had gonorrhea in his youth like "every other healthy young fellow." X-ray examination demonstrated a dilated aorta with a succular aneurysm of the descending aorta about the size of a tennis ball just above the diaphragm. Gastrointestinal x-ray was negative except that the stomach was much distended with gas with marked pylorospasm.

Intensive treatment was instituted at once, beginning with .4 gm. arsenobenzol which was well tolerated. There was complete relief of symptoms following the second treatment and patient has remained free from subjective symptoms to date.

A recent x-ray shows that there has been no increase in the size of the aneurysm. In fact, the roentgenologist was sure there was a distinct diminution in size. Of this I am extremely doubtful, as teleoroentgenograms were not taken. The chief point of interest in this case is the appearance of symptoms after a distinct trauma and their disappearance after specific therapy.

Case 4. R. J. W., age 37, married, real estate salesman. Family history: Father lived to age of 86, mother 76. Past history: Minor diseases of childhood, gonorrhea nine years ago, no history of syphilis.

Present illness: In July, 1921, commenced to have pain in the stomach, coming on two or three hours after eating, relieved by food and soda, no emesis, no tarry stools. Under frequent small meals, followed by an alkali, was relieved for a period of five months, then symptoms returned following dietary indiscretions. Relief was again experienced by returning to former diet until five months ago, when he had a rather acute attack of pain suggestive of appendicitis. Since then has not felt well. Pain now comes about one-half hour after eating, is not relieved by alkalis except that soda gives some relief by the eructation of gas. Pain is at present in midepigastrium. Some tendency to constipation. No symptoms referable to the circulatory system.

Physical examination: Pupils equal and react to light and accommodation, tongue clean, buried, cryptic tonsils; pulse 72, equal, no thickening of the radials; lungs negative. Heart: dulness over the manubrium and extending both to the right and left of sternum, in the first and second interspaces, dulness extending somewhat further to the left than to the right, the transverse diameter of the area of dulness being 77 cm. Inspection fails to reveal any abnormal areas of pulsation; there is no pulsation in the episternal notch; heart area not enlarged. On ausculatation no murmurs are heard. Aortic second sound is louder than the pulmonic but not suggestive of the "bruit de tabourka." Abdominal examination is negative. Knee jerks present and equal. No edema, no glandular enlargement. Blood pressure 130-80. Urine clear, acid, no albumin, no sugar. Differential blood count: 80 per cent polys, 20 per cent mononuclears. Blood Wassermann negative. Gastric analysis. Total contents 60 c.c., free HCl 54, combined 34, total acidity 88, no occult blood.

X-ray examination shows a diffuse dilatation of the aorta with increased density. A two meter picture was taken and the aorta found to measure 9 cm. in width. Gastrointestinal findings were negative except that the barium meal tends to collect in the bottom of a number of deep haustrations.

Summary: A patient age 37 with no past history of syphilis and a negative blood Wassermann presents himself with a history very strongly suggestive of ulcer. Upon examination a diffuse dilatation of the aorta is found and no evidence of ulcer either in the stomach or duodenum. In spite of a negative blood Wassermann, our diagnosis must be syphilitic aortitis with reflex gastrointestinal symptoms. Are the deep haustrations in the cecum syphilitic ulcerations? Only time and the effect of the treatment will tell.

These cases illustrate three of the forms of cardiovascular syphilis, viz.: Early aortitis, aortitis with aortic regurgitation, and aortitis with aneurysm. To these a fourth should be added, aortitis with angina pectoris. Syphilitic aortitis first attacks a small circumscribed spot at the root of the aorta, thence spreads up and down, upward involving the arch and descending aorta but stopping at the diaphragm, thereby differing from atheroma. It progresses downward more slowly to involve the aortic valves. In its downward progress it may involve the mouths of the coronary arteries but does not extend into them. The aortic valves may be scarred, shortened and thickened, thus producing a regurgitation, or the aortic ring may be widened without involving the valves. In no case is aortic stenosis produced.

The invasion of the artery is along the vasa vasorum by the way of the lymphatics which richly surround the vessels, the invasion extending from the thoracic lymph glands, tho why the spirochete should have a special predeliction for thoracic lymph glands has not as yet been demonstrated. Along the vasa vasorum we find collections of lymphoid and plasma cells and sometimes giant cells. The pathologic process attacks chiefly the media, causing fragmentation and destruction of the elastic tissue with connective tissue replacement. If the weakening of the media is slow, the secondary thickening of the intima counteracts the strain, and the dilatation if present is slight. If the change in the media is rapid, the wall may give way with the formation of an aneurysm. Dilatation may be either local or generalized, and depends partly on the strength of the aortic wall and partly on the internal pressure. The inner surface of the aorta shows larger or smaller cushion-like patches or wheals, translucent in appearance and of a pearly gray color, alternating or intermingling with pitted, scarred, and longitudinally wrinkled areas.

The majority of cases occur in midlife between the ages of 30 and 50, tho in Longscope's series one-half were under 40 and 80.9 per cent under 50. However, the average for all cases is 47.36 years. Rheumatic affections of the aortic valve usually appear under the age of 30, while atheroma ordinarily occurs after 50. The possibility of atheroma and leutic aortitis occurring in the same subject must be borne in mind. The average length of time between the initial lesion and the appearance of symptoms is from 15 to 20 years. Brooks, however, mentions two cases of aortic aneurysms found at autopsy within six months of the primary lesion. The period of latency, on the other hand, may be greatly prolonged, periods of 41, 44 and 54 years being reported.

The two principal subjective symptoms of aortitis are pain and paroxysmal dyspnea. The pain may vary from a sense of constriction in the chest brought on by exertion to the most agonizing pain which cannot be differentiated from pain of cardiac origin, namely angina pectoris. The pain is located beneath the upper portion of the sternum or in the precordial region. It may occur alone or associated with dyspnea. It tends to recur, increasing in frequency and intensity. Barker describes a case with a blood pressure of over 200 who presented himself complaining of severe pain beginning in one tooth, extending down into the chest and thence into the left arm.

The cause of the pain in aortitis has given rise to much discussion. Albutt believes that the aorta and not the coronary arteries is responsible. Certain it is that these attacks of pain may occur without any involvement whatever of the coronary arteries. McKenzie is of the opinion that the pain in angina pectoris is caused by an impairment of the function of contractility of the heart muscle, the heart muscle itself "producing pain when it is confronted with work greater than it can readily overcome." The fact that the pain rarely arises at the first exposure of the heart to the effort that induces the pain, he explains by assuming that "the heart muscle induces pain on the principal of summation of stimuli."

Paroxysmal dyspnea was described as long ago as 1899. It is very characteristic, striking the patient with startling unexpectedness and lasting from five to fifteen minutes. I can do no better than quote Longcope's lucid description of an attack which he observed: "Suddenly during rounds, the patient showed signs of great distress. He sat up in bed and gave a sharp agonizing cry for help. Going immediately to the bedside, he was found sitting up, leaning forward with a pained, anxious expression and showing the most marked dyspnea. He implored us to relieve him of his distress but talked quite intelligently thruout the attack and said there was no actual pain, but terrific difficulty in getting his breath. The supraclavicular spaces were retracted during inspiration, the chest moved scarcely at all, while the respiratory excursions of the diaphragm were extreme. Respiration was rapid and tho inspiration seemed difficult, expiration was accompanied with the greatest effort and exertion and was comparatively much prolonged. The pulse was 128. The chest was hyperresonant and on auscultation were heard diffusely scattered sibilant and occasionally crackling rales. About the height of the attack the patient began to sweat about the head and face. At this time, too, he began to cough and expectorate a small quantity of thick blood stained mucus." These attacks tho short leave the patient exhausted, and with them there is usually a concomittant rise of blood pressure. There are no other subjective symptoms of uncomplicated aortitis which are of importance.

Before discussing the physical findings, I wish to call your attention briefly to the frequent association of aortitis with syphilis of the nervous system. Every case of tabes and general paralysis should be thoroly examined for the presence of aortitis. Albutt states, "on comparing many published records, in tabes it may be no exaggeration to compute that some degree of syphilitic aortitis, if duly searched for, may be found in 40 per cent, possibly more, and we may surmise that the proportion in general paralysis may be no less."

In discussing the physical findings I shall consider only those in uncomplicated aortitis, as at this stage of the disease it is important that a diagnosis should be made, since when it has progressed to an involvement of the aortic valves or to the formation of an aneurysm, irreparable damage has been done. Inspection is of the greatest importance and for its purpose the patient should be stripped to the waist and examined in a good light. We should systematically look for abnormal pulsations, beginning at the apex and inspecting interspace by interspace, including the episternal notch and the spaces above the clavicles. In the course of this inspection we may find visible pulsations in the first and second interspaces on either side of the sternum, in the episternal notch, with prominence of the neck veins and subclavian arteries. The back of the chest must be inspected as systematically as the front, as aneurysm not infrequently manifests itself by pulsation in the back.

Percussion will demonstrate dulness over the manubrium and in the first and second interspaces to the right and left of the sternum, usually extending further to the left than to the right. The average transverse diameter of the dulness is 7 to 9 cm. The area of cardiac dulness is usually but not always increased. Upon auscultation the most characteristic finding is a peculiar accentuation of the aortic second sound. It has quite a different quality from the second sound as heard in hypertension. It has been described as metallic, clanging, etc., but the best term to describe it is "bruit de tabourka" on account of its resemblance to the tones of the tabourka, an Algerian drum. Other abnormal sounds heard upon auscultation are due to the various complications that may be subsequent to the aortitis.

We have two other extremely important methods of diagnosis, namely the x-ray and the Wassermann reaction. The x-ray gives us the earliest information in respect to the widening of the aorta. In the normal subject the aortic shadow does not extend beyond the margin of the sternum. In aortitis Longcope has described the following types: (1) Widening of the aortic shadow in a curved line to the right of the sternum as far as or beyond the right border of the heart, the outline being generally quite regular but occasionally irregular with some broadening of the shadow to the left. (2) A general enlargement to the left with less of the well defined aortic knob or simple enlargement and prominence of the knob. (3) The aortic shadow takes on the appearance of a truncated cone, its broad base resting upon and fusing with the heart shadow.

The Wassermann reaction in the blood is positive in approximately 80 per cent of the cases. But it must be borne in mind that a negative Wassermann means nothing, when a dilated aorta has been definitely demonstrated by the x-ray. In the Mayo clinic it was found that it was useless to expect late syphilis to yield in the aggregate more than 50 per cent of positive blood Wassermann to aid in the diagnosis of the disease.

If we can diagnose syphilitic aortitis in its early stages before it involves the aortic valves, it is probable that the disease can be arrested by energetic antisyphilitic treatment. But while syphilitic aortitis before it involves the aortic valves may lie latent a long time, its progress after it has produced aortic valve incompetence is rapid, often bringing life to an end in two or three years.

Prophylaxis seems to me to be of the utmost importance in the treatment of syphilitic aortitis and involves the whole question of when shall we consider a syphilitic cured, if ever. Personally, I believe that we have no safe criterion of a cure. The Wassermann reaction is notoriously unreliable. It may be negative for long periods at a time and then be found present, thereby indicating an active focus of infection in the body. Warthin by painstaking effort was able to demonstrate the presence of living spirochetes in the organs of subjects presumably long cured of their syphilis. In the male it is significant that they were most frequently found in the aorta, heart and testes. It seems to me that the old dictum, "once a syphilitic, always a syphilitic," is true and that the only way we can guard against the late manifestations of syphilis is that, after the initial course of intensive treatment over a period of one and one-half to three years, we advise our patients to return at least once a year for a course of mercurial treatment as long as they live.

In this connection I would like to quote a recent pronouncement of E. Farquar Buzzard. He wrote, "How long must I go on with the treatment before I am cured? we are all asked. For many years my answer has invariably been 'For the rest of your life.' I am never consulted about a primary chancre but if I were my answer would be the same." Speaking of present day treatment he says, "If you take a hundred cases of syphilis and treat them according to the standard methods of the day, you are justified in believing that a certain proportion of them will have been cured, but you cannot honestly tell any certain one of these patients that his disease has been eradicated."

When cardiovascular syphilis has been established, our treatment should be the same as for syphilis elsewhere in the body except that in these cases the use of arsenobenzol should be preceded by a preliminary course of mercury and iodides, so as to avoid a Hexheimer reaction. Intensive treatment should be given for a year and a half and then periodic treatment for the rest of life.

What may we expect from treatment?

(1) In simple aortitis an arrest of the process and prevention of aortic incompetence and aneurysm.

(2) In cases suffering from paroxysmal dyspnea and angina-like pain, we may expect relief from the attacks in a certain number of the cases over a varying period of time.

(3) In aortic insufficiency and aneurysm we cannot expect very much. We cannot hope to undo the damage already done, but it is our duty to treat the syphilis in the hope that we may arrest further progress of the disease.

I have purposely left out many details in this paper but it has been by intent to make it a clinical rather than an academic discussion. What I have chiefly tried to impress upon you is that every syphilitic is potentially a cardiac case; that the treatment of syphilis must be continued thruout the life of the victim, and that in this continuance of treatment thruout life lies our only hope of reducing the number of cardiovascular syphilis cases that come to us for treatment. Judging from the cases I have presented to you this evening, there will still remain a sufficient number who have never been aware of a previous syphilitic infection.

HEART IRREGULARITIES

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HISTORY

Mackenzie[1] has called attention to the fact that previous to a century ago diseases of the heart were diagnosed and prognosticated without the use of instruments, and that when the stethescope was invented and heart murmur discovered, the response of the heart to effort was neglected and undue attention was given to heart murmurs. If a murmur was discovered, the heart was considered diseased and the owner was doomed to limited activities. It was common for life insurance companies to reject all applicants who showed any kind of heart murmur. During the present year, to my knowledge, at least one of the largest life insurance companies has modified its rules to the extent that policies are issued on such applicants at an advanced rate, when the murmurs are systolic in time, the heart is not hypertrophied, and the functional tests show that the myocardium is in good condition.

Indeed, it has only been within the last few years that medical men have changed their opinions regarding heart murmurs. So rapid has been the change of opinion that some doctors say a murmur has no significance in diagnosing heart troubles, while others say a murmur is of value in directing the attention of the examiner to pathologic conditions of the muscles of the heart. It may safely be said that a systolic murmur is innocent until proved guilty and that a diastolic murmur is guilty until proven innocent. Lewis[2] says, "Systolic murmurs, soft, harsh, or conducted, are natural phenomena, when the organ is accelerated by exercise." Paul White[3] says, "The presence of a diastolic murmur at the apex is positive evidence of organic heart disease, usually of mitral stenosis, but sometimes of aortic regurgitation."

Graham Steel[3] in 1895 suggested the relationship of "the disappearance of the presystolic phase of the diastolic murmur" in the absolute irregular pulse. It remained for Mackenzie to establish this fact a few years later. That is, when the pulse is perpetually irregular and the presystolic murmur disappears, the auricle is fibrillating. After Mackenzie had established this fact and after Einthovan of Lyden brought forth his string galvonometer, Lewis began his investigations upon the heart by means of precise graphic methods. Following Lewis, many in this country are doing valu-

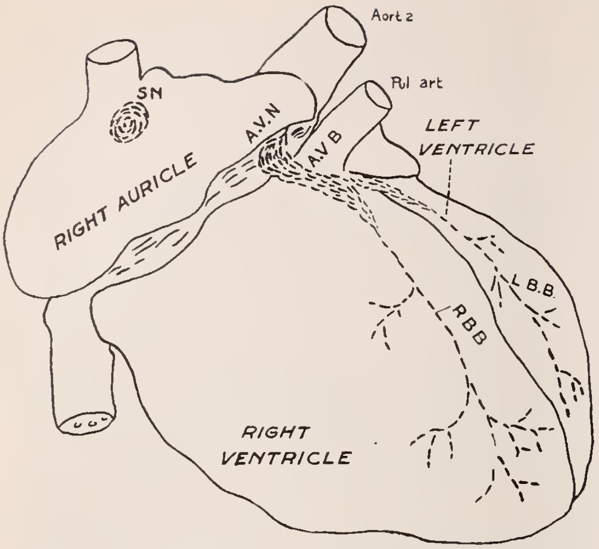

Fig. 1. S.N., sinoauricular node, in which impulses of the heart originate. A.V.N., auricular ventricular node, from which the A.V.B., auricular ventricular bundle, originates and divides into the L.B.B., left bundle branch and R.B.B., right bundle branch. Impulses arising in S.N. cause a wave of contraction to pass thru the auricular musculature. When this wave of contraction strikes the A.V.N., an impulse arises here which is passed thru the A.V.B., and thru the L.B.B., terminating in the perkenjie fibres. Immediately the ventricles contract.

able work, notably Paul White of Boston, Willius of Mayo Clinic, Carter of Cleveland and others. Lewis[4] says that the "newly acquired knowledge (of the heart) has been gathered largely by the precise graphic methods . . . Familiarity with the heart's mechanism in health and disease is a first essential, if these newer conceptions are to be appreciated. Judged by present day standards, those who do not possess this familiarity are not competent to deal with cardiac patients."

PRECISE METHODS

You will notice here a chart copied from the Medical Clinics of N. A. September 1919, Morris H. Kahn (fig. 1) (after Smith). This chart illustrates in a very simple manner the conductive system of the heart. The sinus node (SN) represents the pace maker. It is situated in the right auricle near the superior vena cava. At this point (A. V. N.) you will notice the auricular ventricular node. This (A. V. B.) is the auricular ventricular bundle, which, as it leaves the auricle and enters the ventricles, divides into two branches, one entering the left ventricle and the other the right ventricle. As these branches pass thru the subendocardial tissues, they spread "fan-shaped" and finally terminate in the perkenjie fibres.

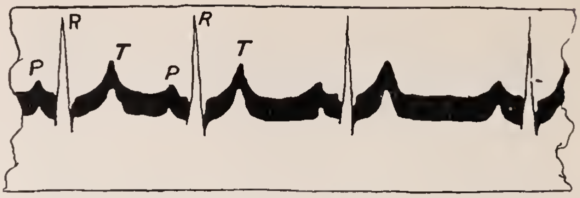

Fig. 2. Normal electrocardiogram. (Compare with fig. 1.) P. represents auricular muscular contraction. R. represents the impulse passing from A.V.N. to the perkenjie fibres. T. represents ventricular contraction.

In the normal adult heart impulses originate in the sinus node at regular intervals of about 72 times per minute. The impulse is transmitted thru the muscles of the auricles in the form of a contraction wave. Some one has compared this contraction wave to pouring molasses on a flat surface. When this wave comes in contact with the auricular ventricle node an impulse is transmitted to the perkenjie fibres over the auricular ventricular bundle and its branches. Immediately the ventricles contract. In fig. 2 you will notice a picture of what takes place during this cycle of the heart's activity. At P you will notice a representation of the contraction of the auricles which requires from .13 to .20 of a second of time. At R you will notice a photograph representing the impulse which passes thru the conduction system in less than .01 of a second of time. At T you will notice a representation of the contraction of the ventricles. *

This, without mentioning other theories, is the generally accepted explanation of the normal physiologic action of the heart. The impulse originates at the sinus node and is transmitted thru the muscles of the auricles in the form of a contraction wave. The contraction wave, coming in contact with the auricular ventricular node causes an impulse which passes over the conduction system, terminating in the perkenjie fibres and causing the stimilus which causes the ventricles to contract.

HEART DISORDERS

1. *Sinus Arrhythmia.* This is an irregular condition of the pulse, occurring in young people, due to the influence of the vagus nerve on the sinus node. The pulse is accelerated during inspiration and slowed during expiration. Exercise or anything which has a tendency to increase the pulse rate prevents or decreases the irregularity. This irregularity occurs in normal individuals and is of no pathologic significance.

2. *Extrasystole.* While the ventricles are contracting, a stimulus of any kind which reaches them meets with no response. But suppose that immediately following the contraction of the ven-

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* "It must be recognized, however, that the graphic representation of contraction in the electrocardiogram is the expression of change in electric potential and not the translation of actual contractions."
Willius, F. A.: Am. Jour. Med. Sc., Dec., 1920, Vol. CLS, No. 6, No. 585., p. 846.

tricles an abnormal stimulus arises in a ventricle, the ventricle would respond to this stimulus and contract; and during the time of the contraction the normal stimulus sent down to it from the sinus node, over the conduction system, reaches it and meets with no response, because it is contracting in response to the abnormal stimulus. The next contraction of the ventricle will not occur until the next normal stimulus reaches it, giving the sensation of a drop beat. This abnormal premature beat is called an "extrasystole." Extrasystoles are of no pathologic significance in themselves but, as Lewis[5] says, "Because they frequently consort with relatively grave cardiac maladies, their detection demands a close scrutiny of the heart from other points of view."

Diagnosis. Extrasystoles occur generally in adults, more frequently in men than in women. If the premature beat opens the valve, it may be heard at the apex closely following a normal beat with a pause following. Extrasystoles scarcely ever occur in a pulse beating above 120 per minute. Exercise or anything which causes an increase in the pulse rate will remove or decrease the irregularity, while in fibrillation the irregularity is increased. No drug, so far as treatment is concerned, has any influence over the irregularity.

3. *Fibrillaton.* In the normal adult heart all impulses originate in the sinus node and are transmitted to the auricular ventricular node by the contraction wave of the auricle, and then to the ventricles by means of an impulse thru the conduction system. These impulses and contraction waves pass thru the heart in an orderly manner at regular intervals of time. At times, however, in pathologic conditions, this orderly physiologic action of the heart is superseded by a delirious condition of the auricle. The muscular fibres of the auricle contract in a disorderly manner without any relation to the contraction waves of other contracting fibres. Many of the impulses liberated by this wriggling mass of contracting muscular fibres are sent to the ventricles at rapid irregular intervals. Some cause the ventricles to contract while others are lost. Some contractions of the ventricles are so weak that the valves are not opened; others may open the valves but the impulses are so weak that they are not felt at the pulse; others are strong enough to cause either a strong or weak pulse wave. This disorderly action of the heart is known as "auricular fibrillation."

Diagnosis. The pulse is irregular as to time and force. The pulse rate is generally above 90 per minute. The more rapid the pulse, the more certain is the irregularity, due to auricular fibrillation. The rate of contraction of the ventricle heard at the apex is more rapid than that of the pulse rate, because all of the impulses of the ventricles do not reach the radial artery. Exercise, or anything which increases the rate of the heart beat, increases the irregularity, while other arrhythmias are decreased or abolished. When the blood pressure is taken, the pulse beats come on at irregular intervals, some being high, others low.

4. *Heart Block.* Lewis[6] says, heart block is "an abnormal heart mechanism, in which there is a delay in, or absence of, ventricular responses to the auricular impulses." When the connection between the auricle and the ventricle is severed in complete heart block by a pathologic condition of the auricular ventricular bundle, the auricle beats at a normal rate of about 72 times per minute; while the ventricle beats independently thru impulses, originating within itself at a rate of about half of the auricular rate.

Diagnosis. When the pulse is under 40 or 50, heart block is to be suspected. Variations in the heart sounds, due to the systole of the auricles and ventricles, occurring at the same time or separately may be present. Graphic methods are the only means of showing up different grades of heart block.

5. *Pulsus Alternans.* Pulsus alternans is a weakened condition of the heart which is exhibited by alterations of weak and stronger contractions of the ventricles. White of Boston considers it as common as fibrillation. Lewis says, "It is the faint cry of an anguished and fast failing muscle, which, when it comes, all should strain to hear, for it is not long repeated. A few months, a few years at the most, and the end comes."

6. *Myocarditis.* It was Mackenzie who called the attention of the profession to the fact that heart failure was due to pathologic condition of the muscles of the heart rather than to that of the valves. The auricles may not function for years and yet the patient may be up and about his business. But when the myocardium of the ventricles becomes involved and the ventricles cease to act, the patient promptly dies. In this disorder not only is the myocardium involved, but also the conduction system; hence, writers speak of this disease in different terms; "intraventricular block," "bundle branch block," "arborization block," "subendocardial myocardial disease." A detailed historical study[13] of only a comparative few has been

made, but it has been quite well established that the disorder is due to fibrosis. Willius[8] says that about half of the cases are due to infection, about 40 per cent to degenerative process, which comprise "the hypertention group with and without nephritis, thyrotoxic, adenomas (nonhyperplastic toxic goiter), and exophthalmic goiter (hyperplastic toxic goiter)." He says that about 10 per cent are due to local disturbances, such as "sclerotic and obliterative processes, involving the main coronary arteries, or their larger branches, or by capillary fibrosis of the terminal vessels, locally or diffusely."

White[3] and William Reid call attention to the importance of diagnosing mitral stenosis, because "the same infection which attacks the valvular endocardium to the extent of causing the stenotic change, attacks the myocardium as well."

Willius[8] says, "The degree and extent of muscle involvement directly determine the symptomatology . . . . . . Dyspnea following exertion is constantly observed, but orthopnea and paroxysmal dyspnea, the latter occurring when the patient is at rest, are striking symptoms. The infrequency of pitting edema is worthy of mention. Patients having subendocardial myocardial disease are up and about with relative comfort even after the disease is quite well advanced. Sudden deaths are infrequent, but when the disease process has reached the stage at which the ventricles are prevented from maintaining a relatively efficient circulation, the subsequent progression to fatal issue is short . . . . . Ausculatory findings in these cases are very characteristic. The heart sounds are distant and the normal differentiation between the first and second tone is lost. They are often well described as 'blanketed' heart sounds." Oppenheimer and Rathchild say there is "(1) a muffled, poor, or practically absent first heart sound and (2) a gallop rhythm. One is often struck by the fact that the heart is hypertrophied, but that the first sound, instead of being booming, has a poor or muffled quality." Mackenzie[9] suggests that reduplication of the first sound is caused by bundle branch block.

Prognosis. Willius[10] gives a mortality of 69.6 per cent in an average duration of eight and one-half months in 138 cases. Carter[11] in a study of 22 cases gives a high mortality. Oppenheime[14] and Rothchild give a mortality of 48 per cent in two years of all cases whose fate was known in intraventricular block. Morris[12] gives a 100 per cent of mortality in two years in a study of about 150 cases.

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PERICARDITIS *

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We believe that the attention given to pericardial conditions is very disproportionate to their frequency and to the role they play in being one of the frequent causative factors in myocardial conditions. We are certain that there are more cases of pericarditis that are not diagnosed than those that are diagnosed. Holding, as we do, that pericardial inflammations are almost always secondary or collaboratory to another condition either near or remote and generally of primary intensity, they are often overlooked and, unless the prime symptoms of pericarditis are present, they go on to an apparent cure unnoticed.

The study of the pericardium has made but little progress in the past century and has in no measure kept pace that that of the myocardium and the endocardium, but rather has been relegated to obscurity on account of the rapid strides and intensity of the study of the general heart condition. Levine states that it is difficult to express exactly the role the heart investment plays. He might as well state that we do not know the role the housing on the differential of an automobile plays. First, it is the supporting membrane of the heart; second, the lubricant housing, and third, it gives us the hydraulic cushion to prevent against injury and allow necessary movement of the heart and lungs.

The visceral layer is in intimate and constant contact and closely invests the heart as high up as

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* Read before Lane County Medical Society, Eugene, Ore., June 19, 1924.

the great vessels. The fibrous layer is intimately close to the pleura at the mediastinal portions of the parietal layers of both right and left lungs, the esophagus, and is attached to the diaphragm. Its intimate closeness with these thoracic structures of necessity renders the disease invasion from them easy and frequent, and in a more or less degree of severity much more frequent than is generally supposed. It is our belief that in quite a large proportion of pleura-complicating pneumonia there is an attendant slight or severe pericarditis; and this is a frequent cause of the heart disturbance so commonly found as the complication. Should there be a pericardial complication, pericardial disturbances would be the natural consequence, as an inflammatory condition, involving either or both the fibrous and visceral portions of the pericardial membrane, must of necessity alter or hamper the normal movements of the heart muscle, when this organ is already carrying an overload on the right side. Hence, there must be an arrythmia which unbalances the valvular mechanism and proper timing.

This valvular disturbance can be generally recognized by prolonged systole and clicking sounds at the aortic-tricuspid closure. The tracing in this class of pericardial interference with the normal myocardial functions gives us a shortened number four wave or ascending limb and an attenuated C and V wave with a rounding at the C angle, and it is generally possible to get a friction rub that is not to be confused with the pleural friction, because the pericardial friction is generally heard best and loudest near the base and it is independent of respiration, and accompanying systole and diastole. Occasionally there is a third friction in mid-diastole. It requires time and thought in the cases of pleural complicated pneumonia to segregate the finer pericardial friction. But we have found it quite possible to make a reasonable positive diagnosis and demonstrate to others the pericardial friction. The author has found that the friction heard just before the first sound is generally easier to isolate than the others and is generally caught at a moment where there is no respiratory movement.

As pericarditis usually is corrected by an effusion of a greater or less amount of fluid, the friction sounds generally disappear in from thirty-six to forty-eight hours and the case goes on to apparent cure. The same is true of a large percentage of our pleurisy cases and, unless it is recognized in this dry or friction period, goes undiagnosed unless the disease is great and persistent. In pericarditis, which is associated with other thoracic diseases, the diagnosis is easier, as the cardial symptoms of the disease stand on the screen alone. The pulse is exhilirated, temperature moderately high and the respiration quickened to quite an extent. There is generally pain of some severity over the precardial area and left shoulder, and the author has found the intense abdominal pain so often encountered about the umbilicus to be one of the aggravating symptoms.

Levine states that pericarditis is frequently a complication of pneumonia; its exact incidence is difficult to state because it is so frequently overlooked. Stone found almost 10 per cent in his autopsies in influenza pneumonia. Metzler and LeMar demonstrated, in their experimental pneumonias in dogs, pericarditis in 70 per cent of the fatal cases. Empyema is one of the great causative factors, Stone having found 87.5 per cent of his empyema cases developing pericarditis.

In this paper we shall not take up in much detail the pericarditis associated with or following rheumatism, nephritis, tonsillitis and so forth, because it is our aim more to direct attention to the liabilities of our overlooking pericarditis, associated with intimate thoracic conditions and attributing the subsequent myocarditis purely to overload, when it probably is due either to a direct extension of the infection to the myocardium or to changes due to the hampering of the normal heart movement, plus overload. The chronic pericardial conditions are more liable to be in conjunction with or following rheumatism or nephritic conditions than those which are a direct extension from the thoracic conditions. Hence, a careful inquiry into all of the past history of the patient is essentially necessary to assist in the diagnosis of a chronic pericarditis.

Case 1. J. R., male, age 27. Pneumonia for ten days. Temperature had been normal for two days, when pericardial pains appeared in the left chest over the left shoulder and temperature 103°, pulse 118. Diagnosed pleurisy. Upon further and more thoro examination plain to and fro friction sounds were heard in the precardial area and a diagnosis of pericarditis made. On close investigation the pleural sounds were not present but had been mistaken for the pericardial sounds. Patient put on potassium iodidi and tincture digitalis with a marked change in symptoms on the third day and their disappearance by the fifth day. No perceptible effusion present in this case.

Case 2. Gladys B., age 6. Bronchial pneumonia of moderate severity. Temperature 102° to 104°. Respiration from 36 to 40. The seventh day marked improvement. The ninth day complained of severe pains over entire chest and in the umbilical region. Careful examination revealed no pleurisy, pulse had practically subsided and it was difficult to make a diagnosis of so diffused pains. On the day following, however, pericardial frictions began to appear over the precardial area and the diagnosis made of pericarditis. The regular treatment of potassium iodidi and tincture digitalis prescribed and there was a marked improvement. However, this case developed quite an effusion which persisted for some five or six weeks and finally disappeared as far as we were able to determine.

Case 3. J. N., male, age 76, Oct. 14, 1923. Mild attack of apparent influenza and considered as only a bad cold. However, pains developed in the chest and over the umbilical region.

We were unable to account for the temperature and respiratory conditions found and after a consultation on the following day we were able to demonstrate to our satisfaction the pericardial friction. This case was complicated with a mitral and aortic regurgitation, together with a tachycardia. This mitral and aortic condition remained after the recovery from the pericardial attack and in all probability had been the condition existing for some time.

Case 4. Pearl C., age 10, May 17, 1923. This child had gone to school as usual but was taken sick suddenly and with severe pain and vomiting, the pain most predominant being in the umbilical region. School nurse put the child to bed and, seeing that she was seriously ill, brought her to our office. The first glance showed that the child was seriously stricken. An examination revealed a strict to and fro friction sound, plainly heard at the base and more or less severe over the entire precardial area. There was, however, in this case a large pericardial effusion, with even a bulging of the diaphragm. The child died at 5 a. m., May 18. No postmortem allowed.

The interesting feature in this case is more because of the fact that the child, in the condition in which she was found, would be able even to attempt going to school or even be out of bed, as undoubtedly this condition had existed for ten or twelve days. In talking with the mother afterwards we found that the child had not felt well for about one month and that for a few days prior to her death she had had a very severe cold which the mother thought was a little touch of flu and the child had not recovered at all from this attack.

Case 5. Ambrosia G., age 22, Nogales, Sonora, Mexico. August 28, 1922. Complained of weakness and pain in the left chest. Very sallow complexion and loss of weight, severe headaches and general prostration. Previous diagnosis: cirrhosis of the liver, made more on account of the abdominal pain and treated with mercury and iodine. Later, went to another physician and treated for anemia. The patient had grown steadily worse from previous treatment.

Physical examination revealed slight liver and spleen enlargement, tenderness over the epigastrium, basal headaches, umbilical pain, constipation. Hemoglobin was 90, blood pressure 124-80, partial coma with pericardial friction. Auricular fibrillation. A distinct dry friction pericardial sound near the base. Diagnosis: pericarditis, mitral insufficiency. Treatment: magnesium sulphate, potassium iodidi and digitalis. The pericardial sounds disappeared in about two weeks. Temperature dropped from p. m. 38°C to 37°C. Later the digitalis was changed to strophanthus which was continued for three months and the patient went to 63.5 kilograms and was apparently well. Examined this case in February 1924 and the sound still present but the patient apparently healthy.

Case 6. Fernando C., age 57, November 11, 1922. Patient complained for one week. When first called temperature 39.4°C. pulse 124, respiration 32. Pain in the left epigastric region, right shoulder and umbilical region. Much abdominal distension and a moderate diarrhea. Lungs nil. Heart: mitral regurgitation and friction pleural sounds over the left lung. No history of rheumatism or infective diseases but a confirmed alcoholic. Had had an attack of poladismo eleven years before. Diagnosis: pericarditis.

December 12, temperature 40°C., pulse 120, respiration 36, pain aggravated. Hot application, magnesium sulphate. Atropine 1/150 gr. Dec. 13, temperature 38.6° C., pulse 130, respiration 40. Distinct friction sounds over the pericardial area. Atropine dropped and 1/100 gr. nitroglycerine substituted. Sulphate continued. Dec. 15, temperature 38°C., pulse 120, respiration 28, pain subsiding. Dec. 17 normal, temperature 37°C., respiration 22, pulse 84. Dec. 21 discharged.

Case 7. Ignatius R., age 6, November 1, 1922, Nogales, Sonora, Mexico. Sudden onset three days before we saw the patient. Severe pain in the left chest, neck and umbilical region. Some abdominal distension. Pain on percussion, pulse 120, temperature 40.1°C., respiration 32. Coarse ralls over the entire left lung, except at the periphery, dry cough, no sputum, constipation and vomiting, reflexes normal. No murmurs found. Diagnosis not made. Second day, temperature 40°C., pulse 120, respiration 30, patient about the same. Diagnosis: pericarditis with an enlargement (cardiac). Improved. History of pain in the legs five months ago had been treated for billiousness.

On account of the inability to retain food by mouth, we resorted to rectal feeding, magnesium sulphate, potassium iodide and strychnine sulphate. The fourth day a distinct loud to and fro friction sound appeared. The temperature proceeded to drop and the respiration was down to 24 by the fourth day. On the sixth day pulse 82, respiration 24, no temperature. Friction sounds less marked, and pain practically subsided. No more vomiting and could feed by mouth. December 1 much improved and able to come to the office.

Case 8. Hubert S., age 60, March 25, 1924. First diagnosis: intestinal influenza but the author was unable to confirm this diagnosis. Second day, after having treated him, a diagnosis of pericarditis was made. The onset was sudden, patient being at work as fireman in the mill. Suddenly taken with chills, followed by a rapid rise of temperature. When the author saw this case a few days afterward, the temperature was ranging from 38.5° to 39.5°C., pulse 120 to 130, respiration 36 to 40. Much pain in the abdominal region. Much distension, no diarrhea. Later the pain disappeared from the abdomen and became fixed in the precardial area. Distinct to and fro murmurs were heard from the case only two days before death.

An early diagnosis was practically impossible in this case, as the abdominal symptoms were greatly in predominance. Had there been any show for a diagnosis for typhoid, that diagnosis could logically have been made. However, there were many features of typhoid lacking and the pericardial rub which appeared later materially assisted in the diagnosis. Patient died April 1, 1924, No postmortem.

A UNIFORM METHOD FOR THE ESTIMATION OF GLUCOSE IN BLOOD AND URINE*

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In a previous paper[1] we suggested modifications of Shaffer and Hartmann's[2] excellent new blood sugar method by means of which their method becomes an easy one to carry out and one suitable for general use by physicians.

In the last stage of the method iodine is set free, and the residual iodine that does not enter into reaction is titrated with standard sodium thiosulphate solution. The original method calls for accurate standardizing of the thiosulphate. This causes sufficient difficulty to constitute a serious drawback, when the method is used by clinicians. We have eliminated this difficulty without sacrificing accuracy. Also, on the basis of our change in the method we have constructed a table from which the percentage of glucose can be read directly without calculation.

Quite recently we have applied the same technic to the estimation of glucose in urine with very satisfactory results. (Shaffer mentions the possibility of using the micro-copper reagent for urine as well as for blood.)

The object of this paper is to give the directions for carrying out the uniform method, as recommended by us for estimation of blood and urine glucose.

BLOOD SUGAR ESTIMATION

Freeing the blood of protein. The estimation is made on Folin filtrate which is prepared as follows: Rinse the syringe with saturated potassium oxalate solution (30 gm. dissolved in 100 c.c. distilled water) and force out all excess, so that only a film of solution remains in the syringe. Draw from a vein at least 3 c.c. of blood and empty into a dry tube. With an accurate pipette measure 2 c.c. of blood into a dry flask and 14 c.c. of distilled water. When the blood is laked, add 2 c.c. of 10 per cent sodium tungstate and then 2 c.c. of two-thirds normal sulphuric acid (slowly and with shaking). Shake well and allow to stand 10 or 15 minutes. If all the protein has been precipitated, the mixture will have a brownish-red color and on shaking very little foam will form. If unsatisfactory, add 10 per cent sulphuric acid a drop at a time with vigorous shaking, until the desired results are obtained. Filter the mixture, using a small filter. If the filtrate is not colorless and perfectly clear, pour it back into the filter once or twice to see if it will become clear. If unsuccessful, return all the liquid and precipitate to the flask and treat with more acid. This Folin filtrate is the same as is used in a number of other blood chemistry methods.

Technic of the estimation. Measure exactly 5 c.c. of Shaffer's micro-copper reagent into a large test tube and add 5 c.c. of the blood filtrate. Plug the tube loosely with cotton and place in a boiling water bath for 15 minutes. Remove it and cool in water. Add 5 c.c. of N/1 sulphuric acid and mix. Let it stand for at least one minute, then titrate the liberated iodine with our modified standard thiosulphate solution (about N/200) until most of the iodine is gone and the solution becomes faintly yellow. Add about 1 c.c. of 2 per cent starch solution and titrate cautiously to the disappearance of the characteristic starch-blue color (a pale copper blue remains). When near the end-point shake well after the addition of each drop.

Calculation. By referring to the special table devised by us the percentage of glucose in the original blood will be found in the column under B opposite the c.c. of thiosulphate used.

URINE SUGAR ESTIMATION

Measure exactly 1 c.c. of urine into a 50 c.c. volumetric flask and fill to the mark with water. Mix well. If Benedict's qualitative test shows less than 1.5 per cent glucose present, measure 5 c.c. of the diluted urine into a tube, containing 5 c.c. of Shaffer's micro-copper reagent and continue exactly as described for blood filtrate. The percentage of glucose in the original urine will be found in the column under U.5 in the table opposite the c.c. of thiosulphate. If the qualitative test shows more than 1.5 per cent sugar, add 1 c.c. of diluted urine and 4 c.c. of water to the tube containing the copper reagent and proceed as with blood filtrate. In this case the percentage will be found in the column under U.1.

Normal urinary constituents give a slight reduction. This error may be ignored or it may be allowed for by deducting 0.1 from the percentage figure.

The presence of protein in moderate amounts in the urine causes no appreciable error in the estima-

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PER CENT GLUCOSE CORRESPONDING TO C. C. THIOSULPHATE USED FOR TITRATION

C. C.	B.	U. 5	U. 1	C. C.	B.	U. 5	U. 1	C. C.	B.	U. 5	U. 1	C. C.	B.	U. 5	U. 1
18.4	.042	.21	1.05	16.2	.104	.52	2.60	14.0	.162	.81	4.05	11.4	.232	1.16	5.80
18.3	.045	.22	1.13	16.1	.106	.53	2.65	13.9	.165	.82	4.12	11.2	.237	1.19	5.93
18.2	.048	.24	1.20	16.0	.109	.54	2.72	13.8	.167	.83	4.17	11.0	.242	1.21	6.05
18.1	.052	.26	1.30	15.9	.111	.56	2.78	13.7	.169	.85	4.23	10.8	.247	1.23	6.17
18.0	.055	.27	1.37	15.8	.114	.57	2.85	13.6	.172	.86	4.30	10.6	.252	1.26	6.30
17.9	.058	.29	1.45	15.7	.116	.58	2.90	13.5	.175	.87	4.37	10.4	.257	1.28	6.43
17.8	.061	.31	1.53	15.6	.119	.60	2.98	13.4	.177	.89	4.43	10.2	.263	1.31	6.57
17.7	.064	.32	1.60	15.5	.122	.61	3.05	13.3	.180	.90	4.50	10.0	.268	1.34	6.70
17 6	.066	.33	1.65	15.4	.124	.62	3.10	13.2	.183	.91	4.57	9.8	.273	1.36	6.83
17 5	.069	.35	1.73	15.3	.127	.63	3.17	13.1	.185	.93	4.63	9.6	.279	1 39	6.97
17.4	.071	.36	1.78	15.2	.129	.64	3.23	13.0	.188	.94	4.70	9.4	.285	1.42	7.12
17.3	.074	.37	1.85	15.1	.132	.66	3.30	12.9	.191	.95	4.77	9.2	.289	1.44	7.23
17.2	.076	.38	1 90	15.0	.134	.67	3.35	12.8	.194	.97	4.85	9.0	.294	1.47	7.35
17 1	079	.40	1 98	14.9	.137	.68	3.42	12.7	.197	.98	4.92	8.8	.298	1.49	7.45
17.0	.082	.41	2.05	14.8	.140	.70	3.50	12.6	.200	1 00	5.00	8.6	.303	1.51	7.57
16.9	.084	.42	2 10	14.7	.143	.71	3.57	12.5	.202	1.01	5.05	8.4	.307	1.53	7.68
16.8	.087	.43	2 17	14.6	.146	.73	3.65	12.4	.205	1.03	5.12	8.2	.312	1.56	7.80
16 7	.089	.45	2.23	14.5	.149	.74	3.72	12.3	.207	1.04	5.18	8.0	.316	1.58	7.90
16.6	092	.46	2.30	14.4	.151	.75	3.77	12 2	.210	1.05	5.25	7.6	.325	1.62	8.13
16 5	.095	.47	2.37	14.3	.154	.77	3.85	12.1	.212	1.06	5.30	7.2	.335	1.67	8.38
16.4	.098	.49	2.45	14.2	.157	.78	3.92	12.0	.215	1.07	5.37	6.8	.345	1.72	8.63
16.3	.101	.50	2.52	14.1	.159	.80	3.98	11 8	.220	1.10	5.50	6.4	.357	1.78	8.92
								11.6	.226	1 13	5.65	6.0	.368	1.84	9.20

B—Blood Glucose per cent.
U. 5—Urine Glucose per cent if 5 C.C. Diluted Urine is Used.
U. 1—Urine Glucose per cent if 1 C.C. Diluted Urine is Used.

tion.

Note on the qualitative test. In a routine Benedict's test we use 5 c.c. of reagent and 0.3 c.c. of urine, and heat in a boiling bath 5 minutes. A greenish tinge is observed in the reduction mixture, even if there is considerable cuprous oxide in suspension, when less than 1.5 per cent sugar is present. If in doubt, run two tubes for quantitative estimation (using 5 and 1 c.c.). After a little experience is obtained in comparing the results of the qualitative test with the quantitative estimation it is easy to judge whether to take 5 or 1 c.c. of diluted urine.

REAGENTS *

(1) *Micro-copper Reagent.* Each constituent should be dissolved separately.

(a) 40 gm. C.P. anhydrous sodium carbonate (or 47 gm. pure monohydrated carbonate) in 400 c.c. warm distilled water.

(b) 5 gm. C.P. copper sulphate (crystals that have not effloresced) in 100 c.c. water.

(c) 7.5 gm. pure tartaric acid in 100 c.c. of water.

(d) 0.7 gm. pure potassium iodate (weighed accurately) in 100 c.c. of water.

(e) 10 gm. pure potassium iodide in 100 c.c. of water.

(f) 18.4 gm. pure neutral potassium oxalate in 100 c.c. of water.

When all are dissolved, mix (c) with (b), and pour the mixture slowly (with stirring) into (a). Combine (d), (e) and (f) and pour at once into the carbonate-copper mixture. Transfer to a liter measuring flask. Rinse all the dissolving beakers with small portions of water. When cooled to room temperature fill to the mark and mix well. Keep the reagent in a tightly corked bottle. A little sediment will be deposited; use the clear top liquid for estimations.

If the chemicals are pure, the reagent run as a control will give the same titration, whether heated in a bath 15 minutes or not heated. With each new batch of reagent run a heated control and compare it with the unheated.

(2) *Standard Thiosulphate.* Dilute thiosulphate does not keep well. Prepare a stock solution of sodium thiosulphate a little stronger than N/10 (dissolve about 26 gm. of the crystals in about 1 liter of distilled water) and let it stand 2 days.

Dilute exactly 5 c.c. to 100 c.c. in a measuring flask and mix. Use this for titrating a control (5 c.c. copper reagent and 5 c.c. water treated with 5 c.c. N/1 sulphuric acid), following the directions given above for the method of titration. The amount used will be less than 19.5 c.c. When duplicate titrations agree within 0.1 c.c., prepare a dilution of the stock thiosulphate such that exactly 19.5 c.c. will be required for the titration of a control. For example, if 19 c.c. of dilute thiosulphate was used, it will be necessary to dilute

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* The Shaw Supply Co. (Portland, Seattle, and Tacoma) will supply ready prepared solutions of guaranteed quality, or any of the chemicals used for the method.

5 c.c. of stock solution to 102.6 cc. (i.e., $\frac{19.5}{19.0}$ x 100). First dilute the 5 c.c. to 100 c.c., then add the 2.6 c.c. with a reliable pipette. Mix thoroly. This ratio of dilution should be determined by similar titration of a control once in two weeks. Prepare the dilute solution each day that estimations are made. This is our modified standard thiosulphate, referred to in the technic. Keep the stock solution in a brown bottle well corked, set away where it will not get warm; under these conditions it does not deteriorate.

(3) *Starch Solution.* This should be made about once a week. We prefer "soluble starch" but undoubtedly common starch could be used. Mix about 2 gm. of starch with 10 c.c. of water and pour it into 90 c.c. of boiling water; mix and boil 1 minute. Add a few drops of toluol as a preservative.

(4) *Standard Sulphuric Acid.* The N/1 solution may be purchased, if one is not used to checking standard solutions. Prepare the two-thirds normal solution by diluting 100 c.c. of the N/1 acid with 50 c.c. of distilled water.

(5) *Sodium Tungstate Solution.* C.P. tungstate should be used, and it should go into solution readily. The reagent must be tested for excess of carbonate as follows: To 5 c.c. of the solution add a drop of methyl orange and some distilled water, then titrate with the two-thirds normal acid until the yellow color changes to a slightly reddish yellow. Between 3 and 3.3 c.c. should be required. If the titration is greater add twice normal sulphuric acid (made by diluting about 11.5 c.c. C.P. acid to 200 c.c.) in sufficient amount to the whole batch of 10 per cent tungstate to bring its alkalinity down to the proper limits. Mix and titrate again.

DISCUSSION

The titration value of different samples of micro-copper reagent, when accurate N/200 thiosulphate solution is used, is not always the same, altho the variation is slight. We find that this value is close to 19.5 c.c., therefore, we have taken this figure as the average titration value. Our table for calculation is based on this fact. Varying the amount of iodate in the reagent changes its titration value.

We have thoroly tested our modified method and have proved that the estimations of blood glucose are quite accurate. Our experimental results will be found in our previous paper[1]. No appreciable error was observed, amounting only to 1 to 5 mg., even when the blood contained 200 to 400 mg. per 100 c.c. Furthermore, variations of the same order (0.5 to 4.5 mg.) were secured with triplicate estimations by Shaffer's original method. The new method has given good satisfaction in a number of laboratories.

The application of the method to urine has been tried out on various concentrations of glucose, ranging from 0.2 to 8.0 per cent. The error did not exceed 0.1 in the per cent figure, e. g., a 2.0 per cent urine would give estimations anywhere between 1.9 and 2.1 per cent. To determine how readily the method can be learned by the laboratory worker we tried it with the sophomore class. In spite of their slight experience with the Shaffer method, 80 per cent of the results reported on urines given out as unknowns were quite satisfactory. On the other hand, only 60 per cent of the results by Benedict's method (with which they had had a great deal of practice) were satisfactory.

If several urines are to be run, the estimations can be finished in much less time than by Benedict's method. A hospital technician who has used the new method for some time reports that 5 or 6 urines can be estimated in 30 minutes.

The advantages of a uniform method for blood and urine glucose are obvious. The estimations on diabetic blood and urine can be run simultaneously, and with the same set of apparatus and the same reagents. There is less liability to error in this iodometric titration method than in other methods; it certainly should be preferred to any colorimetric method. The table for calculation will be found to be a notable advantage of the method. This table can be used only with our modification of the original method.

CONCLUSIONS

1. A simplified uniform technic for estimation of glucose in blood and urine is presented, using a modification of Shaffer and Hartmann's iodometric titration method for blood sugar.
2. The method eliminates special reagents and special technic for urine sugar.
3. Simultaneous estimations of blood and urine sugar can be made rapidly.
4. A special table is furnished which gives a direct reading of percentage of glucose in either blood or urine, corresponding to the c.c. of thiosulphate used for titration, saving time and uncertainty in computation.

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POSTTRANSFUSION REACTIONS. A COMPARISON OF THE CITRATE AND SYRINGE METHODS, WITH A REPORT OF 104 TRANSUSIONS DONE AT THE SWEDISH HOSPITAL *

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Blood transfusion, because of its spectacular nature, the miraculous improvements following its employment in certain cases and the assumed heroism of the donor, has long held the popular fancy. The transfusion of blood dates back to ancient history. It has been stated that the Egyptians, Hebrews and the Syrians practiced transfusion and there are said to be Greek and Roman writers who speak of having witnessed the operation.

Probably the earliest authentic case of blood transfusion is that of Pope Innocent VIII, as recorded in Villari's Life of Savonarola[1]. The aged pontiff was failing, and in an effort to prolong his life and imbue him with the vigor of youth attempts were made to transfuse him three times. Three youths were sacrificed in this attempt which proved vain. This occurred in April, 1492.

Harvey's discovery of the circulation stimulated research and about the middle of the seventeenth century transfusion began to have an established place in surgery. Drs. Lower and King, of Oxford, successfully transfused in February, 1665. Their method was a vessel to vessel system. At first they used quills to join the vessels, but later discarded them for silver tubes. Samuel Pepys[2], in his famous diary under the date of Nov. 21, 1667, states " . . . that is a poor and debauched man, that the College have hired for 20 shillings to have some blood of a sheep let into his body, and it is to be done on Saturday night. They propose to let in about 12 ounces; which they compute is what will be let in a minute's time by a watch." And on Nov. 30, we read, "I was pleased to see the person who had his blood taken out. He speaks well . . . saying that he finds himself much better since and as a new man, but he is cracked a little in his head, tho he speaks very reasonable and very well. He had but 20 shillings for his suffering it, and is to have the same tried upon him a second time; the first sound man that ever had it tried on him in England, and but one that we hear of in France." It was due to the work of Lower and King that this transfusion was successful.

Elsholtz[3], in 1667, published a little book on transfusions. He also cites instances where remedial agents could be given by vein with more effect than by mouth. And he seriously states that the blood of husbands and wives of irreconcilable dispositions might be beneficially mixed by venous injection.

For several hundred years very little appears to have been written regarding transfusion. It had evidently fallen into disrepute because of the opposition of public opinion.

Blundell[4] of England, in 1818, revived the art. Upon witnessing a fatal case of hemorrhage, he set about devising means and methods of transferring blood from one person to another. He thought blood could be introduced into the veins by means of a syringe, and conducted experiments to ascertain what effect the interior of the syringe would have on the blood. He was unable, however, to transfuse much blood with his single syringe. The first report of practical transfusion by several syringes did not come until eight decades later, when Professor von Ziemssen[5] demonstrated the value of this method.

The direct method has had its exponents in more recent times. Carrel's direct end-to-end suture of blood vessels and the Crile cannula, with its modification by Elsberg[6], brings us down to 1909. Later in 1909 Brewer and Liggett[7] suggested paraffin-coated glass tubes. Bernheim[8], in 1912, described silver cannulas which slipped one inside the other, following the idea described by Libavius[3] of Halle, two centuries prior.

The following year Kimpton and Brown[9] described a method, whereby they collect unmodified blood in a paraffined tube or bottle, and then inject it without the addition of any anticoagulant. Lindeman[10], in 1913, described the so-called syringe method, advocating the use of a special cannula with a number of syringes. Unger[11], in 1915, offered another modification of the syringe method.

About the same time investigators were working on the chemical side of the problem in an effort to prevent coagulation. Two substances were brought forth, hirudin and sodium citrate. Hirudin is the active constituent of the oral secretion of the leech, and was brought to the attention of the medical world by Abel[12], in 1913. The sodium citrate method of preventing clotting was reported almost simultaneously by three men. Hustin[13] reported it in May, 1914, Lewisohn[14] on the 23rd of January, 1915, and Weil[15] just one week later.

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* Read before the Monthly Staff Meeting of Swedish Hospital, Seattle, Wash., June 3, 1924.

In Lindeman's first article he advocated the introduction of physiologic saline into both the veins of the donor and the recipient between each syringeful of blood. This was done in order to clean out the cannulas and prevent the formation of clots. In his later articles[16] he decries this practice and does not inject anything else into the vein except whole blood.

Greenhouse[17], in 1920, perfected a system of tubes with a three way stopcock, which enabled a single operator to perform a syringe transfusion.

It might be trite at this time to mention something of the history of isoagglutinins in human blood in its relation to blood grouping. Isoagglutinins have been recognized for a little more than twenty-five years. In February and May, 1899, Samuel G. Shattock[18] reported to the London Pathological Society, "Chromocyte clumping in acute pneumonia and certain other diseases, and the significance of the buffy coat in the shed blood." Landsteiner[18] made real contributions to the knowledge of blood groups and in 1901 he showed that isoagglutination was independent of health or disease and followed definite laws. He made three groups, called A, B, and C. In the following year Decastello and Sturli[18] established a fourth group by reporting four cases that did not fall in any of the three established groups. Jansky[19], in 1907, reported the existence of four isoagglutination groups. Moss[19], unaware of the work of Jansky, again worked out the four groups in 1910. Inasmuch as Moss and Jansky did not number their groups in the same way, much confusion has resulted. Jansky I corresponds to Moss IV, and Jansky IV corresponds to Moss I. It is probable that the other two groups correspond. The Moss classification was the one adopted by the Medical Department of the Army. Some laboratories use the Moss, others the Jansky classification.

Some workers have attempted to get away from the classifications altogether, by speaking of "universal donor" and "universal recipient." In order to standardize the classification a special committee met in 1921. Ludwig Hektoen, W. J. Elsner, and Reuben Ottenberg represented the American Association of Immunologists; C. G. Bull, J. A. Kohlmer, and A. F. Coca, the society of American Bacteriologists; and H. T. Kastner, the Association of Pathologists and Bacteriologists. These men unanimously recommended, on the basis of priority, that the Jansky classification be adopted.

This report covers the blood transfusions that have been done at the Swedish Hospital since the advent of standardization in August, 1920. During this time 10,700 patients have been admitted to the hospital and there have been 104 transfusions on 58 patients. It is possible that some transfusions not done in the surgery have been omitted in this report. The report covers, however, all the transfusions which appear in the records.

Table 1

	Cit.	Syr.	Arterio Art. Ven.	Kimpton Kimp. Brown	Tot.
Aug. 1920 to Aug. 1921	19	0	1	0	20
Aug. 1921 to Aug. 1922	21	4	0	0	25
Aug. 1922 to Aug. 1923	12	19	0	2	33
Aug. 1923 to May 1924	12	14	0	0	26
Totals	64	37	1	2	104
Total of first two years	40	4	1	0	45
Total of last 22 months	34	33	0	2	59

From Table 1 it is seen that each successive year has seen more transfusions done. The methods of transfusion are also shown. There has been one arteriovenous direct transfusion. This was done by means of the Elsberg modification of the Crile cannula. The Kimpton-Brown tube has been used in two transfusions. The syrings method has been used 37 times, and the citrate method 64 times. The last two years shows an appreciable increase in the number of transfusions done by the syringe method, there being but four transfusions by this means prior to August, 1922.

The cannula method connects the radial artery with the median basilic vein. It has been almost totally discarded for other methods. The tube devised by Kimpton and Brown collects whole blood more or less free from contact with air. The interior of the tube is paraffined. The blood flows from the tube into the vein of the recipient under gravity pressure. In the syringe method several syringes are used and as one operator is filling a syringe, his associate is emptying one into the vein of the recipient. This is repeated as often as deemed necessary. Blood is collected in a receptacle in the citrate method, being mixed and stirred with a glass rod. This is then transferred to an intravenous apparatus and the blood flows into the vein by force of gravity.

There has been a variety of conditions for which the transfusions have been done. Table 2 shows these conditions. Primary or pernicious anemia heads the list with 49 transfusions. Secondary anemia places second with 39 cases. The miscellaneous group remaining contains but 17. The causes of the secondary anemia can be seen in the lower part of the table. But four of these appear

Table 2

CONDITIONS FOR WHICH TRANSFUSIONS WERE DONE

Pernicious Anemia	49
Secondary Anemia	38
Hemophilia	4
Operative Shock	4
Septicemia	3
Aplastic Anemia	2
Malignant Endocarditis	2
Leukemia	1
Hemorrhagica Neonatorum	1

SECONDARY ANEMIA

Hemorrhage—	
Fibroids	9
Post-Nasal	4
Nasal	3
Intestinal	3
Post-Operative Abdominal	2
Tubal Abortion	2
Gastric Ulcer	1
Premature Separation of the Placenta	1
Cancer—	
Gastric	2
Ascending Colon	2
Sigmoid	2
Uterus	1
Malnutrition	1
Sarcoma	1
Abdominal Abscess	2
Iodide Poisoning	1
Unknown	1

to be due to a toxemia alone; all the others have loss of blood as the etiologic factor.

The amount of blood transfused at one operation has not been very large. Lindeman[16] has reported 108 cases of syringe transfusions in patients suffering from pernicious anemia with amounts ranging from 1000 c.c. to 2200 c.c., averaging almost 1400 c.c. per transfusion. None of his patients had a chill, altho 18 per cent had a rise in temperature of three degrees or more. In this series, as shown in Table 3, the largest amount was 800 c.c. and but 11 per cent of cases were transfused with more than 500 c.c. at any one time. Of the eight cases which were given less than 200 c.c. of blood, half were infants, the smallest amount being 20 c.c., given to a year old infant. Most of the patients received but one transfusion, as shown in Table 4. All of the cases receiving over three transfusions were cases of pernicious anemia.

Table 3

AMOUNTS OF BLOOD TRANSFUSED

	Cases
Less than 100 c.c.	2
Between 101 and 200 c.c.	6
Between 201 and 300 c.c.	10
Between 310 and 400 c.c.	9
Between 401 and 500 c.c.	65
Between 501 and 600 c.c.	10
Between 601 and 700 c.c.	1
Between 701 and 800 c.c.	1
Smallest Amount	20 c.c.
Largest Amount	800 c.c.

Table 4

NUMBER OF PERSONS TRANSFUSED

1 Transfusion	37
2 Transfusions	12
3 Transfusions	3
4 Transfusions	3
5 Transfusions	1
6 Transfusions	1
10 Transfusions	1

Table 5

ULTIMATE RESULTS OF PATIENTS TRANSFUSED

	Cases	Per Cent
Life Saving	2	3.4
Marked Improvement	8	13.8
Improvement	26	44.8
No Improvement	5	8.6
Death	15	25.9
Unknown	2	3.4

In Table 5 we note the final results of the transfusions. In at least two cases this operation was strictly a life saving measure. In 62 per cent of cases there was greater or less improvement. Altho 15 cases died in the hospital, there has not been a death since this series began which was due to transfusion. Some cases have been in extremis when the operation was begun. One case, not included in this series, died on the table while the surgeons were preparing the donor for the transfusion. Cases of sepsis, carcinoma and extreme exsanguination make up the larger part of this group.

Many of the cases which did die in the hospital showed marked improvement in hemoglobin, red cells, and general condition after the transfusion had been done. A case report will illustrate the point.

Mrs. W. W. C. lost a great deal of blood incident to a premature separation of the placenta. Cesarean section was performed. Ten hours later the patient became comatose, so a transfusion was done. 350 c.c. of blood was given. Needling elicited no vein, so incision was made without anesthetic. After the injection the skin was sutured with no indication of pain on the part of the patient. Improvement was so marked that three hours later she required morphine to control pain. A short time later her pulse became irregular, respirations were shallow and irregular and an hour later she expired. In this case there is little doubt that subsequent transfusions would have saved her life.

Another patient, Mrs. A. G., suffering from pernicious anemia, was transfused twice in 1921. Her hemoglobin rose from 15 to 60 per cent and she was enabled to resume her usual occupation for two years. She entered the hospital in 1923 and, altho transfusion was again done, she died.

In all, a conservative estimate of definite improvement following transfusion would be as high as 85 per cent.

The main theme of this paper has to do with posttransfusion reactions. In a definite proportion of patients receiving blood a certain train of symptoms follows. In days before agglutinins were known, before the work of Jansky and Moss was known and its value recognized, there were many fatal reactions. It was no doubt such results that led so many early writers to condemn it so vigorously. The incompatibility of blood, whereby the serum of the recipient agglutinates the erythrocytes of the donor, gives rise to the so-called group reaction. There is sudden suffusion of the face, dyspnea, pain in the precardial region, pain in the chest, back and limbs, cyanosis, rapid irregular pulse, twitching of the muscles, at times amounting to convulsions, and too often lapse of consciousness followed by death. These reactions occur usually before the first 75 c.c. of blood have been introduced. Such reactions are always severe and usually fatal. They can be absolutely prevented by accurate laboratory procedures. One may well ask, then, "Why do such reactions continue to occur?" There are several reasons, as I shall attempt to show.

1. Donors will present themselves as Group IV or Group I. The confusion obtaining because of the dissimilarity of the Jansky and Moss classifications immedately arises.

2. All universal donors (Jansky Group 1) are not compatible. The writer belongs in this group, yet tests have shown the presence of hemolysins in a patient's serum against his red cells. Unger[20] recently brought out the point in hand. He states, " . . . it is commonly believed that the cells of Group IV (Moss) cannot be agglutinated by any serum. A person of this group is accepted as a universal donor. In nine patients, however, serum was found to agglutinate cells of certain Group IV (Moss) donors. A result of this kind demonstrates the inadequacy of typing merely the patient and the necessity of testing the blood of donor and patient, one against the other." He lays down the dictum, "It is unsafe to perform a transfusion, relying simply on the fact that the donor and the patient are of the same group. Preliminary to transfusion, the blood of every patient should be grouped and then tested directly against that of the prospective donor." This harks back to the early work of Coca[21] who advocated direct agglutinative tests between donor and recipient. Lewisohn[22] in 1923 states, "Group matching, tho very popular on account of the ease of execution, is not as accurate, and is apt to be followed by a larger number of chills."

Perhaps the reason for the unreliability of blood grouping may be found in the recent work of Guthrie and Huck[23] and Guthrie and Pessel[24]. Instead of there being only two agglutinins in sera, they have found five. This multiplies enormously the number of groups. With three agglutinins and three agglutinogens, they compute twenty-seven possible blood groups, of which they have demonstrated eight. This complexity in blood grouping undoubtedly accounts for certain variations in established groups, as mentioned by Unger.

3. Another cause of incompatibility results from changes which take place in the recipient's serum in certain cases. A donor may be used for a case once and the bloods be perfectly compatible. This is no indication that the donor may be used again without the usual customary cross-agglutination tests. This foreign material, the donor's blood, may stimulate the production of antibodies against it. These antibodies are usually hemolysins, altho they may be agglutinins.

An instance of this kind occurred in this hospital. A patient, No. 7744, was transfused May 12, 1923, with 500 c.c. of his son's blood. He entered the hospital again several months ago. The laboratory again cross-agglutinated the bloods. This time they found the serum of the father had acquired an agglutinin for the son's cells, and the bloods were incompatible.

This phenomenon is not at all unknown. Ottenberg and Libman[25] first pointed it out in 1915. Drinker and Brittingham[26] cite a case which was transfused the second time from the same donor eleven days subsequent to the first transfusion. The temperature rose 4.2°, there was a severe chill, hemoglobinuria, and hemorrhages from the mucous membranes.

McClure and Dunn[27], of the Johns Hopkins Hospital, find it increasingly difficult to find compatible donors for cases of pernicious anemia which have had a large number of transfusions. Thalheimer[28] reports a case of collapse and severe hemoglobinuria after a second transfusion from the same donor. The second followed the first by but a few days. He concludes, "If the same donor is used for more than one transfusion on the same individual, the direct tests must be made each time before each transfusion. This is necessary because agglutinins and hemolysins originally absent may develop against a donor's blood, when the donor is used more than once in the transfusion of the same patient."

It is much to the credit of the laboratory of the Swedish Hospital that in this series of cases, covering a period of four years, there has not been a single case of transfusion of incompatible blood. Typing or grouping of blood is not carried out, but the direct cross-agglutination of serum and cells is done in each case and prior to each transfusion, regardless of previous tests of the same bloods.

There is another type of reaction differing from the group reaction of incompatible bloods. In this type we find a chill, an elevation of temperature, rise in pulse rate, profuse perspiration, nausea or vomiting or both, and in some cases collapse. This reaction is not due to any incompatibility of blood and laboratory tests seem powerless to prevent it. Various theories have been advanced to account for these symptoms. Satterlee and Hooker[29] believe "that many of the febrile and toxic reactions, not to be explained by hemolysis or agglutination, are due to the transfusion of blood which is undergoing incipient coagulative changes or which contains potential coagulative factors." Drinker and Brittingham[26] emphasize " . . .changes in the platelets, . . . a part of the process of coagulation." Clough and Clough[30] explain reactions similarly.

In order to lessen the number of reactions from early coagulative factors, Hartman[31] devised a scheme to mix the citrate with the blood in the needle. In his first 60 cases he had a reaction percentage of 38.3 per cent. With his new method, however, 40 cases gave but 20 per cent reactions.

Aeration of the blood has been blamed for causing reactions and some investigators with a more or less complicated apparatus have been able to collect blood under negative pressure. Their results were gratifying but they did not reduce the number of reactions below 25 per cent. The length of time the blood remains outside the body seems to bear some relationship to the frequency of reactions. The shorter the time, the fewer the number of reactions that occurred.

The anticoagulant has been incriminated. Drinker and Brittingham[26] in their researches found changes in the red blood cells due directly to the sodium citrate. They found the cells became more fragile, and were thus rendered more liable to hemolysis. The work of these men is of greater value when it is considered that they are not exponents of any particular method.

We may next take up the methods of transfusion and compare them as to reactions. There is no similarity in the use of the term reaction. To some men it means a chill. To others it means the whole category, including nausea and vomiting. Keeping this fact in mind will prevent undue prominence being given to any single group of figures. Taking up the citrate method first, we find the following figures. Drinker and Brittingham[26] report 60 per cent reactions in 83 cases. Pemberton[32] found 36 per cent reactions in 1,036 cases. Sydenstricker et al[33] noted 17 per cent reactions in 100 cases. Clough and Clough[30] report 32 per cent reactions in 214 cases. Meleney et al[34] found 64 per cent reactions in 196 cases. Lewisohn[22] reports 24 per cent chills in 365 cases. Guthrie and Huck[23] noted 55 per cent chills in 78 cases. Ravdin and Glenn[35] found 31 per cent reactions in 18 cases.

Early workers with the syringe method likewise had a high percentage of reactions. Meleney et al[34] report 64.4 per cent reactions in 73 cases. Lindeman[36] in 1914 found 33 per cent reactions in 150 cases. In 1916[37] his next 155 cases showed 9 per cent chills. In the early syringe transfusions physiologic saline was introduced into the veins between each syringeful of blood, to prevent clotting in the cannula. Since discontinuing this practice the reactions have dropped markedly, and in 1919 Lindeman[10] reported 214 consecutive cases without a chill. He injects huge quantities, up to 2,200 c.c., as has been stated before, and he has a temperature ris in from 12 to 36 per cent. The larger amounts of blood usually show a greater proportion of high temperatures.

From these reports of the citrate method we may expect from 17 to 64 per cent reactions, and in the syringe method less than 10 per cent. Berheim[38], of Hopkins, in addressing the American Medical Association in 1921, stated: "We may expect that in from 20 to 40 per cent of all citrate transfusions a reaction of greater or less severity will follow. The whole blood transfusion has a percentage of reactions hardly so much as 5 per cent." He goes on to condemn citrate transfusions in the following terms: "But we must not be blind to the fact that the sodium citrate blood transfusions possess certain obscure, but none the less inherent features that are not only embarrassing to the physician but most uncomfortable and even dangerous to the patient. Chill and fever and profound shock have never helped anyone, and to ignore the danger of these sequelae merely to note their occurrence without vouchsafing a careful consideration of their eventualities, is little more than admitting a mind closed to certain embarrassing features connected with the procedure. The dread reactions still persist and persist despite the most painstaking efforts to discover their cause or origin. Our apathetic attitude on this question of citrate transfusion reaction is not unlike our attitude toward the blood-matching tests in the early days of blood transfusion development. Then every one felt that it was not necessary or essential, but merely a refinement, nothing more."

In our series of 55 citrate transfusions and 36 syringe transfusions, results similar to the above figures have been obtained. Thirteen cases have

Table 6

THIRTEEN CASES EXCLUDED FROM REPORT OF REACTIONS

Citrate Method, 9 Cases—
- 3 Followed Operation.
- 1 Preceded Operation.
- 1 Died 35 Minutes Later.
- 1 Died 4 Hours Later.
- 1 Died 24 Hours Later.
- 1 Baby—Out Patient.
- 1 Septic Temperature with Chills.

Syringe Method, 1 Case—
- 1 Malignant Endocarditis.

Arteriovenous, 1 Case.
Kimpton-Brown Tube, 2 Cases.

Table 7

REACTION FOLLOWING TRANSFUSION

	Citrate		Syringe	
	Cases	Per Cent	Cases	Per Cent
Chills	22	40.0	2	5.5
Nausea or Vomiting	10	18.2	1	2.8
Profuse Perspiration	2	3.6	0	0.0
Collapse	3	5.5	1	2.8
Temperature Rise—				
Less than 1 degree	12	21.8	31	85.9
1.2 to 3 degrees	21	38.1	3	8.3
3.2 to 5 degrees	17	30.9	1	2.8
Over 5 degrees	5	9.0	1	2.8
Pulse Rise—				
Under 10 points	22	40.0	33	91.5
11 to 30 Points	19	34.5	3	8.4
31 to 50 points	9	16.4	0	0.0
Over 50 points	3	5.5	0	0.0
Irregular	2	3.6	0	0.0

been excluded from the report on reactions for the reasons stated in Table 6. There were insufficient cases of transfusion by the arteriovenous or Kimpton-Brown tube from which to draw any conclusions. In the other cases extraneous conditions interfered, so that the presence or absence of a reaction could not be definitely established.

Table 7 tabulates the reactions in the two methods. Forty per cent chills were noted in the citrate series, while 5.5 per cent were noted in the syringe series. In the matter of temperature rise the syringe method showed a distinct advantage. We found 40 per cent of the citrate transfusions showed a temperature rise of over 3°, while but 5.5 per cent of the syringe transfusons showed a similar rise. Eighteen per cent had nausea or vomiting in the citrate series, while 2.8 per cent suffered these symptoms in the syringe series. Thirty-five per cent of the citrate transfusions showed a pulse rise of over 30 points, while such an increase was not noted in any case of transfusion done by the syringe method. From every standpoint the superiority of the syringe method is apparent, at least as far as reactions are concerned.

There seem to be several reasons why this condition obtains. The advantages claimed by its originator for the syringe method are as follows: The blood passes thru a minimum amount of foreign material. There is no blind system into which the air may leak, and there are no rubber tubings, stopcocks, or valves around which blood may clot. The total length of time that the blood is outside of the body is about six to ten seconds, and it is impossible to have any physical or chemical change in that length of time. No anticoagulants and no foreign material are introduced into the patient. The blood does not come into contact with the air. In these ways the syringe method does away with all the reaction-producing elements mentioned earlier in this paper.

Perhaps the greatest benefit of whole blood injection is to be obtained in cases of anemia complicating sepsis. Unger[39], following his researches, concludes, "Sodium citrate diminishes the complement . . . and also reduces almost to nil the function of opsonins. It practically destroys the phagocytic power of white blood cells. Since complement and the phagocytic power are of prime importance in the protective action against pathogenic organisms, unmodified blood should be employed when attempting to combat local or general infections by means of transfusion."

There are disadvantages in the syringe method to be sure. The chief objection is that it requires skilled and able operators. Lindeman[10] states it "will yield brilliant results in the hands of the skilled and failure in the hands of the inexperienced." Bernheim[38] deplores the fact that the "giving of whole blood necessitates a far higher degree of skill than does the giving of citrated blood. It requires great and constant practice."

These statements do not seem to be in strict accord with our findings. In the 37 syringe transfusions that were done at this hospital, 14 different combinations of men have operated. It is true that half of them have been done by Drs. Jones and Buckner, who have popularized this method here. Yet in 9 of these 37 transfusions, the internes have assisted, and one emergency transfusion was done by one operator assisted only by one nurse. Altho it is true that the citrate method is easier and can be done by one operator alone, the advantages to be gained by transfusing whole unmodified blood far outweigh the disadvantages.

The technic that is used here is as follows: The vein is first transfixed by a very fine straight needle, which is thrust thru the skin and thru the upper third of the vein. This prevents rolling and slipping of the vein. The cannulas or large needles are then introduced into the veins of donor and recipient. A sphygmomanometer cuff is applied to the arm of the donor above the elbow. Three syringes are necessary, five are desirable. Thirty c.c. syringes are used, altho in the literature twenty c.c. are recommended because they fill and empty in a shorter time. As soon as a syringe is filled it is passed to the other operator to be emptied into the vein of the recipient. While one syringe is being emptied, another is being filled. As soon as a syringe is emptied it is passed to a nurse who thoroly cleans it with physiologic saline, removing all threads or clots of blood.

The veins are not cut down on. That practice not only complicates the operation but also spoils a good vein which may be needed some time in the future. Kimpton[38], in 1921, stated that the only modification he had made in his technic since its inception was in discontinuing cutting down on the veins. In very rare instances it is necessary to expose the vein, but in the average adult it is an unnecessary insult.

CONCLUSIONS

1. The Lindeman syringe-cannula method is very much superior to the citrate method of blood transfusion, as far as reactions are concerned.

2. The syringe method is not unreasonably difficult, and is strongly recommended as the method of choice in this operation.

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Malaria Control in the United States. The present general campaign against malaria in the Southern States of the United States may be said to have started in 1917, in and about the many army camps scattered from Maryland to Texas. Naturally the work inside the camps was done by the army, and that in the environs by the United States Public Health Service, which enlisted, so far as possible, the assistance of the state and the local communities. With the close of the war this particular effort stopped. As a war measure it had been carried out regardless of expense; the cost was invariably high, and sometimes where the camps, for strategic reasons, were located in regions where the control problem was especially difficult, it was very high. The hesitation of smaller and poorer communities to undertake the work was easily understood.

Previous reports have told of the pioneer work of the International Health Board in malaria control, beginning in 1916. By a series of demonstrations, it was able to show that malaria control need not be expensive, but that an average community can virtually rid itself of the infection at a per capita cost of from 45c to $1 a year, provided a careful preliminary survey is made to define the particular local problem. When adequate control measures have once been established they can be maintained from year to year at a much lower per capita cost. The results of the demonstrations were brought to the attention of state health authorities, and an ever increasing number of projects have been undertaken by the community or county, the state, the United States Public Health Service, and the International Health Board.

For malaria prevention, as for public health work in general, the county is a better administrative unit than the town, since county organization makes for greater stability and continuity of effort.

PRESERVATION OF THE PELVIC FLOOR DURING AND AFTER LABOR

Ralph Edgar Allen, M.D.

SEATTLE, WASH.

The slogan in obstetrics today is protection and conservation, protection of anatomic relations and conservation of physiologic function. The time has arrived when those of us who practice obstetrics must give the young mother every assurance that she can look forward to something other than a gynecologic future. To render this service means more than has been ordinarily accepted as obstetric care. Such care has its beginning early in pregnancy, continues on until labor, then on thru the puerperium and for a year following the birth of the child. It means the establishment of certain routine habits that every childbearing mother must recognize and adopt unto herself.

This whole matter of assisting the young mother to avoid the need for corrective surgery after childbirth is very largely the responsibility of the general practitioner. The man in general practice does and always will do the major portion of obstetric work. It is the general practitioner who maintains the normal level of our professional standards. This is a basic fact.

One observes that in the stress and strain of general practice there is allowed but little time to be given to special investigation of any one problem. It is this fact probably more than any other consideration that has allowed us to be very complacent and rather indifferent to the traumatic inflictions of child bearing. One cannot justly place the responsibility for this condition entirely at the door of the man in general practice, however. One has only to observe as he journeys afield to conclude that there is in many of our teaching centers a spirit of indifference to these same traumatisms of labor. By using the word traumatism I refer to perineal lacerations, involving the urogenital septum, the subvaginal fascia, the intercolumnar fascia, the constrictor cunni, the levator and sphincter ani muscles and the vesicovaginal fascia.

Repair following delivery is too often incomplete. Fascial herniae are allowed to go undetected and these act as the forerunners of much pelvic pathology. Muscular relaxation and overstretched fasciae, where no tearing has been detected, are often productive of gaping of the vulva, involuntary passage of urine and ascending infections of the genital tract. The cervix should always be routinely examined very carefully after every delivery for the presence of lacerations. Direct examination with uterine dressing forceps should be made in every case, examining very carefully the entire rim of the cervix. Failure to do this is more universal than one might think. One is impressed with the lack of this procedure in so many of our large obstetric hospitals. Too much stress cannot be given this matter. Prevention is the keynote of such a procedure. Every woman left with a torn cervix is a potential prospect for cancer. Every woman left with a badly relaxed outlet in addition to a torn cervix is a prospective candidate for the operating table later in life.

To minimize trauma at the time of delivery the posture of the patient is very important. The modified Walcher is the best position for delivery in all cases, normal or abnormal, as it minimizes the tension on the perineum. The dorsal position, which is used almost universally, predisposes to laceration, in that it very perceptibly increases this tension. The patient should be placed in the modified Walcher position, when the head is on the perineum and before bulging becomes very prominent. This position is best maintained with the patient's buttocks on the end of the table, aided by two assistants, one holding each leg with the thighs horizontal with the body and the legs at right angles to the thigh. Adduction and abduction can thus be made at will. This position does not always insure against laceration, however.

If in spite of the modified Walcher position tearing seems imminent, it is best to do an episiotomy. Do not wait until tearing starts to do an episiotomy, rather do it before bulging becomes very prominent. It is unwise to allow fascia and muscle to stretch beyond its point of elasticity before doing an episotomy. The results of the procedure are modified very appreciably by the degree of stretching allowed before the incision is made. The mediolateral episiotomy is preferable to the median incision, because if an extension of the incision should possibly occur, the tearing will be more likely to extend up the vaginal sulcus, whereas in the median incision the extension will occur directly into the rectum. If the bony outlet is of normal size, a median episiotomy may be done but if it is small, always make a mediolateral incision, starting at the posterior commisure and extending out about 5 o'clock. It should be sufficiently wide and deep so that it will not have to be increased with irregular cuts of the scissors. This incision should then be extended up the vagina, incising the vaginal mucosa and sub-vaginal fascia. This gives a clean incised wound which will undergo repair much more readily than an irregular laceration that has not only been torn but stretched.

Some interesting and illuminating observations have been made at the Chicago Lying-in Hospital in the postpartum clinics. Comparative results with primiparae who have had episiotomies performed and those who have not and were not torn during labor have been made. One finds that one month following labor those women who have had episiotomies showed no gaping of the vulvae and no relaxation of the perineum. Those who had not and had no tearing showed gaping and variable degrees of relaxation. The most interesting part of this is the beautiful manner in which the perineum is approximated and the entroitus is restored to its virginal state. This complete restoration, which brings together the fibres of the constrictor cunni, preserves intact the normal libido. These muscle fibres, also called Luschka's fibres, play a definite role in the sex life of women. Failure to restore these fibres in their normal relation, failure to restore the fossa navicularis and the even approximation of the fourchette very definitely modify the future sex life of the patient. Much marital unhappiness could be forestalled, if this imbalance were corrected.

The accoucheur should in all cases be very careful in making his perineal repair to get an even approximation of the fascia and muscle fibres. Little stress has been given to the modifying influence of a torn and relaxed perineum on the libido of the patient. Your attention is invited to this important consideration. The undying gratitude of your patient results from your careful work in preserving for her this function which in so many young mothers is virtually lost after the first baby.

The technic of closure of the episiotomy wound, as practiced at the Chicago Lying-in Hospital, is worthy of adoption. One must, however, be exceedingly careful of his asepsis, for if infection develops and sloughing occurs, the situation is most unfortunate. Beginning with a 20 day No. 2 catgut suture, start at the upper angle of the vaginal mucosa and pick up the submucous fascia. Avoid going thru the vaginal mucosa. Continue with this submucous stitch, changing the needle each time in the needle holder. Upon reaching the hymen lock the stitch. Be careful to approximate each side evenly and not to get one side closed farther than the other. After the stitch has reached the hymen and is locked, continue as before for several sutures to make the fourchette and fossa navicularis. When the skin margin is reached, bring the suture thru to the surface and tie. The next step consists in placing three sutures thru the levator ani. These consist of 40 day catgut. The first stitch is U shaped and picks up the sphincter and any cut fibres of the levator ani muscle on the side on which the episiotomy was done; then grasp the intercolumnar fascia on the median side and back out under the urogenital septum. Next, with a long 20 day catgut suture, start at the lower external angle of the wound and bury the knot, leaving the short end standing. This suture layer takes in the urogenital septum. When reaching the top of the exposure of this septum, go out under the skin and with a wide inclusion of the needle pick up Luschka's fibres or the constrictor cunni. These muscles fibres are those fibres of the levator ani muscle that meet between the anus and the vagina in the perineal body. Start back down the wound, bringing together Colle's fascia. Tie at the lower angle to the short end of the stitch left standing and bury the knot by bringing the stitch out at the same point where the short stitch remains standing. Finish with a subcuticular and pinch the skin edges with hemostats left on for three minutes.

This technic practically restores the perineum to its virginal state and is an absolute prevention of rectocele. It was perfected by Dr. De Lee and slightly modified by Kennedy who is resident obstetrician at the Chicago Lying-in Hospital. Of all the multiplied number of procedures adopted by different men all over the country, this particular technic has the greatest merit in that it restores layer by layer the finely adjusted anatomic relations of the perineum. This technic takes into consideration the union of the constrictor cunni fibres and the closure of the urogenital septum and Colle's fascia separately. If one cannot be assured of perfect asepsis, it is better to use an interupted figure of eight silk worm gut stitch thru the muscle and fascia of both sides. After going thru the muscle and fascia of both sides, back out thru the skin on the side from which the stitch was started. Rethread the needle with the other end of the stitch and back out in a similar manner thru the skin of the other side. This technic is better adapted for use in the home and will give very satisfactory results.

Another effective method of preventing lacerations of the perineum, where the bony outlet is of normal width and muscular resistance is the only barrier, is the ironing out process elaborated by Potter of Buffalo. After thoro cleansing of the vulva the left index finger is inserted into the vagina. A motion of the finger from above downward is instituted. Then introduce two fingers, then three and continue up to the point at which the whole hand is introduced into the vagina. Copious amounts of liquid soap should be used thruout and if necessary take fifteen to twenty minutes to iron out the perineum. Potter very rarely does an episiotomy, as he claims this procedure obviates its necessity.

The conduct of the puerperium is of great importance. Postural treatment should be instituted early. Allow the patient to lie on the side and even on the abdomen. The knee-chest position should be instituted by the end of the first week and practiced daily. When the patient is able to be on her feet, she must immediately institute postural treatment. My plea is that this postural treatment should be as much a part of her daily life as sleeping and eating. Teach her the "mule-kick" which Polak introduced. This is not a new dance but a position wherein the patient who is squatting on her knees throws her whole body forward, resting only on her hands with the feet off the floor. The "bear walk" should also be instituted, with all constricting clothing removed, preferably in her nightgown or bathing suit. The patient walks, touching the floor with her hands, keeping the knees unbended. Any manual of physical exercises will give other valuable exercises and should be adopted but these three in particular should be practiced faithfully as a part of the daily life. When pregnancy intervenes, she may cease her efforts; otherwise this should be done daily at least thruout her childbearing life.

316 Douglas Bldg.

The Prevention of Scarlet Fever. George F. Dick and Gladys Henry Dick, Chicago (Journal A. M. A., July 12, 1924), produced a typical cast of scarlet fever by swabbing on the tonsils and pharynx a pure culture of a hemolytic streptococcus isolated from a lesion on the finger of a nurse who acquired the disease while caring for a convalescent scarlet fever patient: A second group of volunteers was inoculated with the same culture after it had been passed thru a Berkefeld V filter. These volunteers remained well. After about two weeks had elapsed, and they were still well, they were inoculated with the unfiltered culture. Forty-eight hours after, one of them developed scarlet fever. This experiment furnished evidence that the experimental disease had not been causd by a filtrable virus, but by the hemolytic streptococcus itself. These first cases of experimental scarlet fever were reported Oct. 6, 1923. Since the hemolytic streptococcus is found in the throat, and is not usually present in the blood, it is evident that the rash is not produced by the direct action of the streptococcus on the skin. The Dicks found that the streptococcus produces a soluble toxin. This toxin is absorbed into the blood, and causes the nausea and vomiting, and the rash. The discovery of this toxin offered a scientific basis for: (1) the development of a skin test for susceptibility to scarlet fever; (2) preventive immunization, and (3) the production of an antitoxin. The authors now attempted to obtain a skin test for susceptibility to scarlet fever with the toxic filtrate from the same culture that had produced the experimental disease. They found that the filtrate of this culture, when used in the proper dilution, gave positive skin tests in 41.6 per cent of of the persons tested who gave no history of scarlet fever; and that it gave negative, or only slightly positive, skin tests in all the convalescent scarlet fever patients tested. It was also shown that the action of the toxin is inhibited by convalescent scarlet fever serum, mixed with the toxin, or injected intramuscularly before the skin test is made. In six instances in which they had an opportunity to observe the skin test before and after an attack of scarlet fever, it was positive before the attack, and negative during convalescence. It is further noteworthy that the authors' experiments showed that the streptococci used in these experiments fulfilled all the requirements of Koch's laws; hence the conclusion that they are the cause of scarlet fever is justified. They have also shown that it is possible to immunize susceptible persons. Adults are immunized by three injections of toxin at five-day intervals, beginning with a first dose equivalent to 300 skin test doses, and increasing to 1,000 skin test doses. Experience has shown that the immunization must be carried to the point of a negative skin test. The prevention of scarlet fever, after exposure, is more complicated. In case of definite exposure, skin tests are made as soon as possible. At the same time, a culture of the throat is made on blood agar plates. If the skin test is negative, nothing more is done. In those with positive skin tests, the next step depends on the throat culture. If the plates show no hemolytic streptococci, active immunization is carried out with three doses of toxin. If the throat culture shows hemolytic streptococci, passive immunization is accomplished by injection of convalescent scarlet fever serum. Convalescent serum is used to avoid sensitization to horse serum. These preventive measures were carried out in a series of 125 persons exposed to scarlet fever. None of these persons developed the disease

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Victories Over Yellow Fever. Yellow fever was eradicated from Guayaquil in 1919 and from Peru in 1921. No cases have appeared in Nicaragua or Guatemala since 1921. A few cases were reported from British Honduras in 1921, but the epidemic was rapidly and easily controlled. In Mexico control operations were formally closed in November, 1923. No cases have been reported there since December, 1922, and the health authorities of the Republic have announced that the disease has been stamped out. The disease has now been eliminated from the west coast of South America and from Mexico. On the southern continent there are but two known foci—one in Colombia, the other in northern Brazil—and active work is in progress in both. Early in 1923 several hundred cases were reported at Bucaramanga, the capital of the state of Santander in Colombia. On invitation from the Colombian Government, experts were sent by the Board, the diagnosis of yellow fever was confirmed, and control measures were instituted. The Stegomyia index was rapidly reduced, and new cases ceased to appear; none have been reported since May, 1923. There is every reason to believe that the disease is under control. The survey of adjoining regions has been carefully and completely carried out, and no new foci have been discovered.

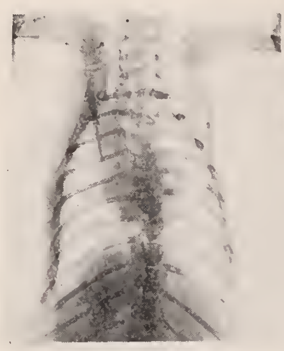

Fig. 1

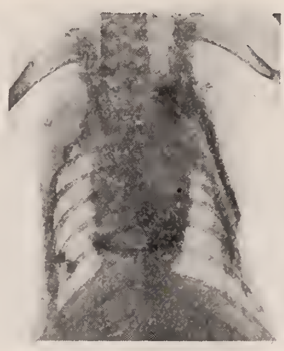

Fig. 2

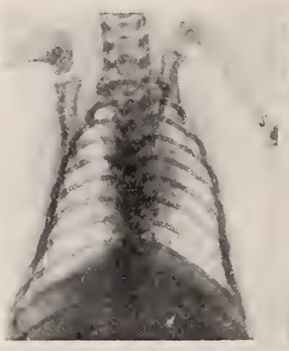

Fig. 3

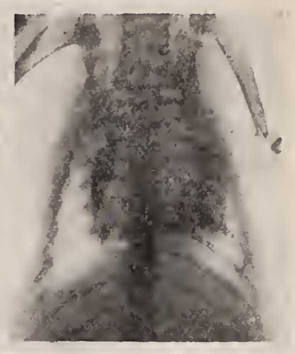

Fig. 4

Fig. 1. Roentgenogram of guinea pig (1) thorax.

Fig. 2. Same as fig. 1 after injecting 1½ c.c. of a 10 per cent suspension of barium sulphate in melted paraffin into anterior mediastinum.

Fig. 3. Thorax of guinea pig (2) before production of artificial enlarged thymus.

Fig. 4. Same as fig. 3 after injection of 2½ c.c. of barium sulphate into the thymic region.

ARTIFICIAL ENLARGED THYMUS * SUPPLEMENTAL REPORT

L. Howard Smith, M.D.

PORTLAND, ORE.

In a preliminary report[1] the effect in guinea-pigs of a sudden enlargement of a semi-soft mass in the anterior mediastinum was noted. Varying amounts of melted paraffine (½ to 3½ c.c.) were injected into the thorax in the thymic region without causing symptoms or sudden death. At autopsy the "artificial enlarged thymus" was recovered, giving the same pathologic picture of an enlarged thymus as in a human child.

It was thought desirable, in order further to simulate conditions in the human, to inject a substance as an artificial thymus, which would cause an x-ray shadow. And then in taking roentgenograms before and after such injection, to secure pictures of what would appear to be an enlarged thymus.

This was accomplished by using a 10 per cent suspension of barium sulphate in melted paraffine and injecting it into the anterior mediastinum. The guinea-pigs carried this foreign mass in the thymic region without symptoms.

The accompanying photographs show the result.

1220 Selling Bldg.

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* From the Department of Pediatrics, University of Oregon, School of Medicine.

[1] Smith. Artificial Enlarged Thymus, Preliminary Report. Northwest Medicine. November, 1923.

Physiotherapy in Orthopedics. Richard Kovacs, New York (Journal A. M. A., July 12, 1924), relates in a condensed form the physics and the mode of action of the various physical therapeutic measures as generally used now, and describes their application in orthopedic conditions in which they are indicated The main indications for the local treatment by physical measures are the following: In traumatic conditions: the acceleration of the process of repair and of the restoration of function by the increase of local circulation; the promotion of absorption; the prevention of adhesions; the relief of pain; the relation of local muscle spasms; later, the restoration of mobility. In acute inflammatory conditions; the combating of the infections process and the relief of pain. In chronic inflammatory conditions: the improvement of local circulation; the softening of adhesions; the removal of inflammatory products; the relief of pain; the increase of mobility. The physical therapy principles at our command to fulfill one or several of these indications are: radiant light and heat; superheated air; whirlpool baths; diathermy; massage; mechanical vibration; manipulation; active and passive exercise; static wave current; faradic curent; galvanic (constant or direct) current; sinusoidal current; ionization, and ultraviolet rays. Physical therapy affords the means of benefiting a wide range of orthopedic, and especially traumatic, conditions. Modern physical therapeutics should utilize all physical agents that have been found to be effective and rational. Treatment should be administered or supervised by medical men specially trained in these methods. Physical therapeutics will be most effective when it is used in conjunction with recognized medical, surgical and orthopedic measures. In the interest of securing the proper place for physical therapeutics in orthopedics, it is desirable that physical therapy methods should be employed and studied on a much wider scale than they are at present, and that the results of properly indicated and administered treatments should be recorded and published.

Prophylactic Inocculation of Dogs Against Rabies. The evidence for for the efficiency of prophylactic immunization in persons bitten by rabid animals has long been too convincing to permit of doubt. In Japan experiments to reduce the frequency of rabies by inoculation of the dog population show that its frequency with dogs has been greatly reduced. (Jour. A. M. A., July 5, 1924, p. 44.)

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AUGUST, 1924

EDITORIAL

IODINE IN GOITER

The enthusiasm of the medical profession in accepting a new procedure in therapy is commendable in the highest degree, but two sources of error may be discerned in the adoption of iodine therapy in goiter. One may be attributed to overenthusiasm, leading to its use when not indicated, and the other to inaccurate knowledge, also leading to misapplication. When Marine and Kimball published their work on the use of iodine in the prophylaxis of goiter among school children in Akron, Ohio, they merely reopened a question of many years standing. "Iodine in goiter" had been known for many years. It was used in the form of ashes of seaweed nearly a thousand years ago. Since then it has been used as a lotion to be applied to the gland locally in the form of a weak tincture. In the latter form its value was probably based upon absorption thru the skin or possibly by inhalation of the fumes. Whatever may have been its path of absorption in that method, its therapeutic results depended upon supplying a deficiency in the economy.

It remained for Henry S. Plummer to show us the exact indications for the administration of iodine, namely, in exophthalmic goiter, especially if there be a gastrointestinal or mental crisis. Its use as a universal prophylactic by iodinizing the drinking water of an entire population is based upon unscientific thought. First, it is questionable whether it can be added in sufficient quantities to be of prophylactic value and at the same time be economically sound; second, it does not take into consideration the harm it may do in two directions; (a) it may in a large population activate or render toxic many cases of adenoma until then innocent; (b) it does not take into consideration the possible gastroenterologic phenomena that might be induced in a population being daily dosed with iodine, however small the amount may be. It is quite a different matter to give an entire population iodine every day and to give school children a small dose once a week or for ten days twice a year.

Another overenthusiastic application occurs in giving it to patients with all forms of toxic goiter. Plummer has distinctly warned against its use in toxic adenoma as being harmful; a repetition of this warning is here sounded. Plummer has treated nearly a thousand cases of exophthalmic goiter by his "ten drops of Lugol's solution" and has found that "two-thirds will be greatly, one-fourth slightly, and one twentieth not demonstrably benefited." The use of Lugol's solution refers to the liquor iodi compositus of the pharmacopeia, 5 per cent and 10 per cent potassium iodid, and not to the 1 per cent laboratory reagent. Dose is ten drops daily, well diluted in moderately severe cases, and during the crisis three or four times daily for a few days.

BIOGRAPHY AS COLLATERAL READING

During the last year this journal from time to time has published editorials which were brief biographic sketches of some of the great men of medicine. The purpose of these editorials was to stimulate interest in the reading of biography by physicians. Everyone in medicine and surgery wishes and ought to do reading that is collateral to the purely scientific phases of professional labor. Everyone ought, indeed, to read much on many subjects. Fiction has a place that should be prominent because of its relaxing influence on minds that, over many hours of the day, are struggling with grave and often depressing problems. History, travel, politics, religion, various forms of science, economics, philosophy any and all may engage attention. But in biography one finds more than a smattering of all of these, combined in such a way as to make them concrete and definite parts of the lives that are being sketched.

The problems so presented may be found being sketched. The problems so presented may be dealt with in man other forms but without the benefit of direct association with some admired and, in that sense, personal hero. The great men of medicine and surgery have invariably been stimulating characters. They have lived interesting lives. They have combined successes and failures, cold science and calculating reasoning with romanticism and have possessed the peculiar powers of leadership which have always attracted attention and which make us look upon them as we look upon great works of art. To those who wish diverting reading, nothing better can be offered than the biographies of those heroic characters in medicine who in almost unbroken succession from the days of Hippocrates have been as beacon lights to the rank and file of his followers.

THE DIABETIC COOPERATIVE STORE

Following the suggestion of Dr. Elliott P. Joslin, Clinical Professor of Medicine at Harvard Medical School and international authority on diabetes mellitus, who recently visited Seattle to participate in the course of medical lectures under the auspices of the University of Washington Extension Service, a group of philanthropists in this city have by endowment made possible the establishment of a diabetic store. This store is to be cooperative in policy and is established to give service to physicians and their diabetic patients at a cost consistent with the circumstances of the individual. Part or full charity will be extended where necessary.

The Virginia Mason Hospital has given without rental charge space for the store. Also this hospital thru its management will furnish clerical supervision of the business dealings of the store. The store will be operated by a student in the Home Economics Department of the University of Washington and will be open to the public about three hours every day except Sunday, the exact hours to be announced later.

Diabetes is a chronic disease, from which patients very rarely if ever completely recover, but which usually remains stationary or improves if properly treated. Because of the nature of the disease treatment, or at least careful supervision of the diet and frequent observation of the urine by the patient, extends over a period of years. In keeping this close observation of his condition the patient is constantly in need of supplies. In this respect diabetes differs from practically all other diseases. Therefore the finances of the patient must be conserved.

Education regarding food values, methods of making from food tables diet lists which meet the requirements of the individual case, instruction to the patient as to what course to pursue in case of accident or threatened acidosis, the importance of general hygiene, these and other forms of advice which the busy doctor does not have time to give to his patients will be made available to patients and doctors by means of two or three lectures a week given by dietitians. The place and dates of these lectures will be announced later.

The supplies to be handled by this store will be food scales, insulin, hypodermic syringes, hypodermic needles, Benedict's solution (quantitative and qualitative), test tubes, medicine droppers, quantitative pipettes, text books, food tables, Joslin forms, etc. This list will be simplified from time to time as the demand warrants it. Mail orders will be handled C. O. D.

The price of these supplies will be regulated by a sliding scale which will be designated as full price, discount, cost, part charity, full charity. The exact price list will be published in the near future. The Diabetic Cooperative Store will open about August 20. It is desired that all physicians and diabetic patients of the Northwest be impressed with the fact that this diabetic store is cooperative in nature. No individual will receive gain or profit therefrom. By making purchases at this store those who are able to pay any price above cost will make it possible to furnish at cost or part or full charity necessary supplies to those who are less fortunate. Thus every purchase made at this store where payment is above cost will be an act of charity. Also it should be remembered by diabetic patients, whom illness or accident may overtake and their finances become temporarily strained, if they have been supporting this store by previous purchases, will be eligible for part or full charity from the fund they have helped to build.

Sincere appreciation must be felt by every physician, every diabetic patient, and every one interested in the welfare of others for this act of charity by these Seattle men. How far reaching the good thus started will be depends upon the support given from now on to this cooperative store by the physicians and patients of the Northwest.

MEDICAL MEETING IN THE MOUNTAINS

The last medical meeting scheduled for the summer among the states of the Pacific Northwest will be that of the Washington association for the 13th and 14th of this month. It will be unique among medical meetings, being held in the seclusion of the mountains, away from the noise and bustle of the city, at a hotel providing all the modern accommodations, located in the midst of the natural surroundings of the rugged mountains. This isolated location should serve to bring the visitors and their wives into intimate relations with one another and foster such friendly contact as cannot be expected in the usual surroundings of such a gathering in a city hotel.

The Big Four Inn, where the meeting will be held, is reached thru Hartford which is about thirty minutes drive from Everett. Automobiles will be parked and guarded at this point, while the visitors are in the mountains. The regular gasoline train leaves Hartford at 10 a. m. and 5 p. m. Special trains will leave Hartford at 4 p. m. Tuesday, August 12, and 7:30 a. m. Wednesday, August 13. Registration will be received at Big Four Inn Tuesday evening and Wednesday morning.

The ladies will be entertained with trips into the mountains, to the Monte Cristo mining district and Silver Lake. Provision will be made for bridge, mah jong and other forms of entertainment. There will be music and dancing Wednesday evening. A golf match will be arranged for Friday, August 15, for those wishing to remain over for this competition.

The complete program for the meeting is given below. It will be noted that the papers presented are all from members of the Washington association, with the exception of papers by Dr. Hepler, who is connected with the medical department of the University of California.

PROGRAM

Tuesday, Aug. 12

7:00 P. M.—House of Delegates. Organization and Reports.

8:00 P. M.—Joint Session of Contact Committees with House of Delegates.

Wednesday, Aug. 13

9:00 A. M.—House of Delegates. Business Session.

SCIENTIFIC PROGRAM

"Acute Osteomyelitis and Its Relation to the General Practitioner," Dr. Russell S. Congdon, Wenatchee. Discussion by Dr. W. D. Kirkpatrick, Bellingham.

"Surgery of the Biliary Tract in the Presence of Jaundice," Dr. R. C. Andres, Spokane. Discussion by Dr. H. J. Whitacre, Tacoma.

"Experimental Hydronephrosis; the Influence of Circulatory Changes in Its Development," Dr. A. B. Hepler, Medical Dept., Univ. of Calif., San Francisco. Discussion by Dr. Archibald Hunder, Vancouver, B. C.

2:00 P. M.

"Prevention of Goiter as Applied to the State of Washington," Dr. E. S. West, Yakima. Discussion by Dr. Brian King, Seattle.

"Activities and Work of King County Goiter Prevention Committee," Dr. D. C. Hall, University of Washington, Seattle.

Public Health League Session. Address by President H. J. Whitacre, M.D., Tacoma.

"The Path of Least Resistance," Robert O. Jones, Executive Secretary.

"League Plans for the Future," E. Weldon Young, M.D., Executive Chairman.

Thursday, Aug. 14.

9:00 A. M.—House of Delegates. Business Session. Election of Officers.

SCIENTIFIC PROGRAM

"Blood Transfusions, Indications, Selection of Donor, Choice of Method," Dr. Wm. C. Spiedel, Seattle. Discussion by Dr. S. C. Lambert, Spokane.

"Recent Addition to our Knowledge of the Etiology and Treatment of Rickets," Dr. D. M. Dayton, Tacoma. Discussion by Dr. E. J. Barnett, Spokane.

"Frequency of Urination in Women. Analysis of 250 Cases." Dr. A. B. Hepler, San Francisco..

2:00 P. M.

"Treatment of Fractures of the Skull," Dr. George A. Downs, Spokane. Discussion by Dr. C. W. Swift, Seattle.

"The Uterosacral Ligament," Dr. A. P. Duryee, Everett. Discussion by Dr. M. C. Lippincott, Seattle.

CLINICAL CONGRESS AMERICAN COLLEGE OF SURGEONS

The Northwest section of the American College of Surgeons, including Oregon, Washington and British Columbia, will be held at Everett Monday and Tuesday, August 11 and 12. The sessions will be held at Everett High School, where registrations will be entered. Monday morning will be devoted to inspection of hospitals, with the scientific program for the afternoon. There will be a meeting with addresses for the general public Monday evening. Operative and bedside clinics will be held on Tuesday morning, with a round-table meeting and discussion for the afternoon. They will adjourn in time for the four o'clock train for the Big Four Inn.

August 11, 2:00 to 5:00 P. M.

1. The Organization of the Professional Services of a Hospital.
2. The Hospital and the Doctor as Cooperating Factors in Diagnosis.
3. The Hospital's Responsibility to the Patient.
4. The Hospital Trustee and His Responsibility.
5. The Clinical Laboratory in Diagnosis and Treatment.
6. Essential Features for the Organization and Operation of Special Clinical Departments in Hospitals: (a) Ophthalmology and Otolaryngology; (b) Obstetrics.
7. The Relation of Hospital Standardization to End Results: (a) End Results in the Treatment of Fractures; (b) End Results in Obstetrics; (c) End Results in Surgery.
8. Round Table Conference and General Discussion.

August 12, 9:00 to 11:00 A. M.

Round Table Conference on Hospital Administration and Standardization Problems. Held by Dr. Malcolm T. MacEachern, Director of Hospital Activities of the American College of Surgeons. Staff organization, case records, laboratories, x-ray, nursing, dietetics, social service, hospital financing, purchasing, hospital construction and other subjects.

THE HELENA MEETING

The Montana association is to be congratulated on its very satisfactory meeting held last month at Helena. The attendance was good, being representative of all sections of the state. The program was of exceptional quality, the papers being on live up-to-date subjects, well written and presented. A very satisfactory feature was the unusually thoro discussion of each paper. This was due largely to the skillful management of President Monahan who discreetly selected certain individuals for the discussion of each paper, whose response and participation was readily given and keenly applicable to the subject under consideration. Aside from papers by Dr. Henry Schmitz, of Chicago, and Dr. R. M. Wilder, of the Mayo Clinic, all were presented by the members of the association. The friendship displayed among the members of the Montana association, and the cooperation for the common interest of medical matters in the state are worthy of consideration and imitation on the part of physicians in other states. It was a great pleasure to have been privileged to attend this meeting.

MEDICAL NOTES

Postgraduate Clinical Tour. The Tri-state district medical association, including, Iowa, Wisconsin and Illinois, is preparing for an interstate postgraduate clinic tour to visit Canada, British Isles and France. The tour will start May 18, 1925. Leading teachers and clinicians of Canada and Europe will arrange and conduct clinics and demonstrations in the following clinic cities: Toronto and Montreal, Canada; London, Liverpool, Leeds, Manchester and Newcastle, England; Edinburgh and Glasgow, Scotland; Dublin and Belfast, Ireland; Paris, Lyon and Strasburg, France. Besides the main tour, special tours to practically all the leading centers of Europe will be arranged. Sight-seeing trips to all places of interest in the countries visited will be included in the regular tour. Cost of tour, including first-class hotels, board, steamship, clinic arrangements and all ordinary traveling expenses, under $1,000.00. The tour is open to physicians in good standing in their State Societies, their families and friends who are not physcians. For information, write the Managing-Director, William B. Peck, Freeport, Illinois.

OREGON

Pacific Coast Oto-Ophthalmological Society held its annual meeting in Portland, July 11-12. The program consisted of papers by members of this society from California, Oregon and Washington. As guests of honor at the meeting were, Sir John Herbert Parsons, of London, Dr. Frank E. Burch, Minneapolis, assistant professor of ophthalmology in the University of Minnesota, and Dr. John E. Weeks, New York. The 1925 meeting will be held at Vancouver, B. C. Dr. H. F. Cunningham of that city was elected president for the ensuing year.

Oregon Free from Fake Degrees. A recent visitor in Portland was Harry T. Brundidge, reporter of the St. Louis Star, who exposed the quack medical factories of St. Louis and Kansas City. He stated that Oregon was the one clean state of the Union which did not foster fake medical degrees. He stated that it was never discovered that one of these fake degrees was ever sold in this state, altho among the effects of the chief promotor of the gigantic diploma mill were found 300 applications for permits to practice medicine in this state but not one was filled out. If any doctor failed to read the exposures published by this reporter in several issues of Collier's last spring, he should make it a business to peruse this unbelievable tale of the making of doctors in less than sixty days and the account of position of importance and prominence held by some of these "graduates."

Appointed United States Representative in Europe. Dr. Ralph C. Matson, of Portland, has been appointed representative of the United States to the International Union Conference against Tuberculosis which meets in Lusanne, Switzerland, in August, this organization being a branch of the health section of the League of Nations. Dr. Matson is now in France after spending six months in England. He will return to Portland at the end of a year, after spending some time in Germany and Austria.

Eastern Oregon Medical Society held its annual meeting at Bingham Springs, July 28-29. The program consisted of the following papers: "When the Abdomen Should not be Opened," Dr. P. W. Willis, Seattle; "Adenomatous versus Hyperplastic Thyroid," Dr. A. C. Smith, Portland; "Recent Work on Cerebrospinal Fluid," Dr. Laurence Selling, Portland; "History of Medicine of Eastern Oregon," Dr. C. J. Smith, Portland; "Some Obstetric Experience," Dr. J. Labbe, Portland; "Postpartum Neurosis of Pelvic Origin," Dr. R. P. Landis, La Grande; "Pulmonary Tuberculosis with Lantern Slindes," Dr. Marr Bisaillon, Portland.

Physician Acquitted. Dr. G. B. Carver, of Klamath Falls, was tried last month for manslaughter in connection with the death of a woman from septicemia. The jury brought in a verdict of acquital after less than five minutes deliberation.

WASHINGTON

Seattle Orthopedic Society has been organized, composed of surgeons who limit their practice to orthopedic work. The charter members are six in number. Meetings will be held the third Tuesday of each month beginning next October. The following officers were elected for the ensuing year. President, H. J. Wyckoff; vice-president, R. L. Jeffery; secretary-treasurer, Roger Anderson.

Physicians Licensed. Licenses were issued by the department of licenses in Olympia, July 8, to the following physicians. By reciprocity, S. Adams, Lebo, Kansas; J. T. Alton, Malad, Ida.; E. T. Anderson, Sand Point, Ida.; H. S. Atwood, Seattle; T. W. Bath, Reno, Nevada; J. F. Battle, Seattle; G. I. Badeaux, Brainerd, Minn.; J. R. Condon, Omaha, Neb.; P. T. Covley, Oklahoma City, Okla.; H. H. Dutton, Yankton, So. Dakota; S. E. Doolittle, Cleveland, Ohio; J. Egbert, Indianapolis, Ind.; J. W. Fennell, Whipple Barracks, Ariz.; F. H. Fillenworth, Iowa City, Iowa; H. W. Fleischauer, Seattle; J. F. Gibson, Olympia; C. C. Goss, Seattle; O. M. Husted, Seattle; C. B. Jones, Quanah, Texas; F. W. Jones, Colfax; F. Leslie, Chicago Heights, Ill.; J. H. McArthur, Baker, Ore.; L. P. McCalla, Boise, Ida.; W.

C. McCord, Columbiana, Ohio; U. H. Merrill, Rochester, Minn.; W. H. Mick, Seattle; W. A. Moore, Steilacoom; J. T. Moriarty, Seattle; J. H. Morrison, Libby, Mont.; W. A. Parrott, Kelso; O. S. Proctor, Rochester, Minn.; A. R. Satterlee, Crawfordville, Ind.; C. L. Smith, Seattle; L. V. Stranz, Tacoma; G. J. Tenbrook, Maxville, Ore.; J. R. Thompson, Puyallup; O. H. Urstad, Minneapolis, Minn.; F. E. Shovlain, Tacoma; Dr. Guiallin, Seattle; Dr. Hudnitt, Indiana; C. B. Murray, Seattle; A. DePierre, Colville; R. W. Shirey, Seattle; H. H. Kretzler, Seattle; C. E. Pinckney, Nesika, Wn.

University Extension Course of Lectures, at Seattle last month, was attended by about 300 physicians. There was much satisfaction derived from the lectures delivered by the three notable lecturers on the program. One of the most useful features of the week was the meeting for the public at the First Presbyterian Church, attended by more than 1,500 people. Sir John Parsons spoke on conservation of vision; Prof. Polak addressed the audience on prenatal care of mothers, while Dr. Joslin presented information on the subject of diabetes and the need of educating the public on the essentials of this and other forms of disease. Meetings of this character are of the greatest value in reaching a lay audience.

A Graduate Nurses' Institute was held at the University of Washington last month under the auspices of the Extension Service, cooperating with local and state nurses associations. Lectures were given by distinguished members of the nursing profession, connected with established institutions, as well as members of the faculty of the University. Graduate nurses were in attendance from all parts of the Northwest.

The Western Section of the American Roentgen Ray Society held a three day convention at Rainier National Park last month. The following officers were elected for the ensuing year. President, Dr. H B. Thompson, Seattle; vice-president, Dr. Carl Parker, Pasadena; secretary-treasurer, Dr. I. S. Ingher, San Francisco. The officers elected for the Pacific Coast Roentgen Ray society, meeting with the above mentioned society, for the ensuing year are: President, Dr. R. A. Payne, Portland; vice-president, Dr. Edward Chamberlain, San Francisco; secretary-treasurer, Dr. R. G. Van Nuip, Oakland. The combined meeting of the two societies will be held at San Francisco in 1925.

Annual Tuberculosis Meeting. The Washington Tuberculosis association held its annual meeting in Everett July 14-16, attended by a large representation of visitors from various parts of the state interested in the campaign against tuberculosis. The prominent visitors were, Miss Edna L. Foley, Superintendent of the Chicago Visiting Nurses Association, Miss Elnora Thomson, of the American Child Health Association and Miss Neva Boyd, director of the recreational training school in Chicago. Beside the program of papers there was a visit to the state reformatory at Monroe and inspection of Aldercrest, the Snohomish county tuberculosis sanatorium.

Full Time Health Officer Recommended. The state department of health has proposed to assist Snohomish county in the establishment of a full time health officer. The international health board sometime ago agreed to contribute annually the sum of $2,500 to the support of two full time health units in this state. The director of the state health board has established one such unit in Walla Walla and now is considering another for Snohomish county. This contribution is conditional upon the state department of health providing an equal amount and that at least $5,000 be available for health work from county funds or other sources. This sum would cover the expenses of the county department of health.

Sanatorium Recommended. Establishment of a tuberculosis sanatorium for Yakima County has been recommended by a committee of the Lions Club of Yakima, which proposes to urge the county commissioners to appropriate funds for the erection of a 50 bed institution in 1925. It is stated that the county is already paying about $8,000 annually for the care of tuberculosis patients. The local hospital has discontinued receiving patients of this character. Under the circumstances it is urged that such an institution is demanded.

New Sanatorium Opened. The new sanitarium at Galen for the treatment of tuberculous children was opened for service, July 26. This new hospital was constructed at a cost of $24,000. A survey has shown more than 500 tuberculous children in Montana. It is believed this new hospital will be of great service in aiding to combat this disease in ths state.

Hospital Site Accepted. The proposed hospital for the Stanwood district will be situated on the hill above East Stanwood which has been donated for that purpose by Commissioner Peter Henning. The site comprises an acre. It is proposed to erect an institution providing 30 beds to cost about $30,000.

Site for Hospital Chosen. The location for the Longview Memorial ospital has been selected at Longview. It will be a three-story modern, fireproof building, containing 80 beds with an expansion capacity to 100. The building will cost $140,000, exclusive of the equipment and hospital appurtenances.

Elected to National Office. Dr. E. Weldon Young, Seattle, was elected president of the American Institute of Homeopathy which held its annual meeting at Cleveland, Ohio, last month.

Filipino Physician Joins Hospital Staff. Murray hospital, at Butte, last month received as intern Dr. Ebery Eliazo, a Filipino graduate of the University of Illinois. He is said to be the only Filipino physician in the state of Montana.

Dr. Harrison LaSalle, of Spokane, has been ordered to the United States naval hospital at Bremerton. For the past three years he has served at the American legation at Peking and the naval station at Manila.

Dr. B. E. Washburn, of Everett, has gone on a year's tour of Europe, where he will visit prominent clinics and also spend some time in India.

IDAHO

Physician Leaves State. Dr. E. E. Maxey has practiced for so many years in Boise that he has become an established institution in that city. For many years mention of the state medical association at once suggested the name of Dr. Maxey. Everybody in Idaho knows him for his good qualities and established character. Likewise he has many good friends in Washington and Oregon. Circumstances have arisen which have made him decide to leave Idaho and locate in Aberdeen. We congratulate the latter city in receiving him as one of its residents, while condoling with Boise over its loss. Those interested in this journal have valued his association with it in the past, he being one of the group of physicians who participated in establishing it as the tri-state journal.

Physician Paroled. Dr. H. Goodfriend, of Boise, sentenced to a term at McNeil's Island for violation of the prohibition law, has had his parole application accepted.

Dr. John Weber, formerly of Boville, Ida., has located for practice at Clarkston.

MONTANA

The Montana Tuberculosis Association held its annual meeting at Helena, July 7. Physicians and health workers from all parts of the state were present, including visitors from the Veteran's hospital, county and city health officers and other agencies interested in combatting tuberculosis. An interesting program of papers was presented, relating to the subject of tuberculosis. The United States Veteran's hospital at Fort Harrison was inspected during the course of the meeting.

Montana Public Health Association held its annual meeting at Helena, July 7-8. As this meeting preceded that of the state medical association, it brought together a large body of state and county health officers interested in public health matters. Special attention was paid to the subject of tuberculosis, with a large number of papers devoted to this general subject. A group of papers also dealt with scarlet fever and diphtheria. Dr. F. C. Pease, of Missoula, was elected president for the ensuing year and Dr. E. R. Farr, of Billings, vice-president.

Dr. Harmon T. Rhodes, who has practiced for some years at Choteau, has moved to Everett, Wn., where he is established for practice.

OBITUARIES

Dr. Mahlon Pearson, of Aberdeen, Wn., died July 6, in a Tacoma hospital. He was born at Attica, Ill., in 1850. After graduating from DePew University he received a medical degree from the medical department of the University of Chicago. Later he studied in New York City. He settled for practice in Aberdeen in 1884, being the first physician to locate in that city. He took an active part in all the pioneer experiences in that part of the country. His practice took him over a very wide area long before the days of automobiles and good roads. He was held in high esteem by all residents of that section.

Dr. Franklin Carr, of Hoquiam, Wn., died July 11 of pneumonia after four days illness. He was sixty-one years of age. He graduated from Rush Medical College, of Chicago, in 1884. He settled in Montesano in 1889, going there from Illinois. He also engaged in the banking business in that city. In 1904 he located in Hoquiam, where he established a bank and trust company. Later he returned to Montesano where he resumed practice. Two years ago he returned to Hoquiam and practiced there until his death.

Dr. H. F. McClellan, of Tacoma, Wn., died June 29, aged eighty-four. He was widely known among the pioneers of that city and vicinity, having practiced there and near Spanaway for thirty-five years.

Dr. Charles S. W. Thompson, of Helena, Mont., died July 11. He suffered from an attack of cardiac disturbance and died in a few hours. He was seventy-five years of age and had practiced in Helena for many years.

The Choice of Operation in Cancer of the Colon, Not Including the Rectum. According to Fred W. Rankin, Lexington, Ky. (Journal A. M. A., July 12, 1924), the right division of the colon around to the middle of the transverse segment, with few exceptions, is best removed in one stage Mobilization of the right colon is usually satisfactorily carried out, provided a type of "digging" operation is not attempted. Two points of suspension are selected—one the head of the cecum, and the other that point on the transverse colon where the anastomosis to the ileum is to be made. Care should be taken to avoid injury to the retroperitoneal duodenum when the upper angle of the right colon is mobilized. The restoration of the continuity of the lumen following removal of this segment may be accomplished by open end-to-end anastomosis between the ileum and the colon or by end-to-side anastomosis. Rankin regards the Parker-Kerr technic of aseptic anastomosis as being an ideal method in colonic resections. Its adaptability is unquestionable, and it is susceptible of modification which will render it acceptible in most cases. It has the distinct advantage of requiring no particular type of instrument, but can be completed with ordinary clamps. To supplement this aseptic method of resection and anastomosis with an enterostomy in the small bowel as a safeguard against gas distention seems feasible. The end-to-side anastomosis may be accomplished either by the Parker-Kerr or by the button technic of C. H. Mayo. Mayo brings the end of the colon up to the peritoneum, and leaves the catgut inverting suture protruding from the wound, thus making a way for a safety valve in case gas formation and distention occur. It has been Rankin's custom, following all resection of the right colon, to provide an enterostomy in the ileum about 15 inches above the anastomosis. This procedure, carried out after the Witzel technic, is most comforting and precludes any discomfort from gas disturbance.

REPORTS OF SOCIETY MEETINGS

IDAHO STATE MEDICAL MEDICAL ASSOCIATION

FIRST MEETING OF THE HOUSE OF DELEGATES OF THE IDAHO STATE MEDICAL ASSOCIATION, COMMERCIAL CLUB ROOMS, BOISE, IDAHO, JUNE 19, 1924, 8 P. M.

Fourteen members were present as follows: D. D. Drennan, J. N. Alley, D. L. Alexander, J. H. Einhouse, W. F. Howard, H. E. Lamb, J. M. Lyle, E. E. Maxey, A. M. Newton, C. W. Pond, H. P. Ross, J. F. Schmershall, R. G. Young, J. N. Davis.

Dr. E. E. Maxey, Boise, elected temporary chairman.

Reading of the report of the committee on revision of the Constitution and By-Laws made before the 31st annual meeting of the Idaho State Medical Association held at Idaho Falls, June 13 and 14, 1923.

The membership of Dr. E. L. Newberne, a legal resident of Idaho but whose position as Chief Medical Supervisor of the United States Indian Service necessitates his absence from the state, was discussed. On motion of Dr. J. N. Alley, of Lewiston, and seconded by Dr. H. E. Lamb, of Gooding, he was retained a member of the Idaho State Medical Association and directed to pay his dues direct to the State Secretary.

The question of the payment of dues late in year was discussed and the secretary advised to follow the custom of remitting balance of present year when paid very late.

The applications for membership of the following were presented: C. F. Hanmer, Salmon; A. H. Budge, Boise; C. P. Clark, Boise; R. J. Alcorn, Sandpoint.

The following committee upon applications was appointed by the chair: R. G. Young, Caldwell; D. L. Alexander, Twin Falls; W. F. Howard, Pocatello.

This committee reported in favor of the acceptance of the applications of Drs. C. F. Hanmer, A. H. Budge and C. P. Clark, and the rejection of the application of R. J. Alcorn.

Moved by Dr. H. P. Ross, Nampa, seconded by Dr. J. F. Schmershall, Jerome, that the applications of Drs. C. F. Hanmer, A. H. Budge and C. P. Clark be accepted. Carried.

Moved by Dr. J. M. Lyle, Lewiston, seconded by R. G. Young, Caldwell, that the application of Dr. R. J. Alcorn of Sandpoint be rejected. Carried.

The question of component societies having as members those of the profession living near the border in other states brought out considerable discussion and the decision that such doctors may have membership in the component societies, if all parties concerned are willing, such membership being a sort of associate membership and not conferring membership in the Idaho State Medical Association.

Adjourned to meet at call.

Adjourned Meeting, 11 A. M., June 20, twelve members present as follows: D. D. Drennan, J. H. Einhouse, H. E. Lamb, E. E. Maxey, W. F. Passer, F. A. Pittenger, J. N. Alley, W. F. Howard, J. M. Lyle, A. M. Newton, J. F. Schmershall, J. N. Davis.

Proceedings of the meeting of the House of Delegates, June 19, read and approved.

The President's address, regarding the proposed amalgamation of the League of Public Health with the State Association under one executive secretary who shall devote his whole time to the combined work, was considered. This matter was discussed generally by all delegates. It was moved by Dr. Einhouse, seconded by Dr. Alley, that the chair appoint a committee to investigate such an organization and report later during the meeting. The chairman appointed the following committee: J. F. Schmershall, Jerome; E. E. Maxey, Boise; A. M. Newton, Pocatello; W. F. Howard, Pocatello.

Dr. Einhouse extended invitation to the Association to meet at Moscow in 1925. Dr. A. M. Newton extended the invitation of the Pocatello Medical Society to meet at Pocatello.

Adjourned to meet at call.

Adjourned Meeting, June 21, 1 P. M. Nine members present as follows: J. N. Alley, W. F. Howard, E. E. Maxey, J. F. Schmershall, J. N. Davis, J. H. Einhouse, J. M. Lyle, A. M. Newton, F. A. Pittenger.

Report of the special committee appointed by the chairman to consider the advisability of an amalgamation of the League of Public Health with the Idaho State Medical Association under a whole time secretary.

The report of this committee was read by the chairman, Dr. J. F. Schmershall, who reported that the approximate cost of such an organization would be about forty ($40) dollars per year for each member in order to maintain a full-time secretary and carry on the combined work, and that an amendment of the constitution and By-Laws to this effect be read at this meeting and a referendum vote be called for at the next annual meeting of the Association. Moved by Dr. Einhouse and seconded by Dr. Schmarshall the report be accepted. Carried.

Election of officers for the coming year.

President: Dr. C. W. Pond of Pocatello was nominated. There being but one nomination the entire ballot was cast for Dr. C. W. Pond who was declared elected.

Vice President: Dr. E. L. White, Lewiston, was nominated and there being no other nominations the ballot was unanimous for his election and he was declared elected.

Secretary-Treasurer: Dr. J. N. Davis, Kimberly, was nominated. There being no other nominations the ballot was cast unanimous and he was declared elected.

Councillor for the North District: Dr. J. H. Einhouse, Moscow, was by ballot unanimously elected to fill this office for the term of three years.

Committee on Scientific Work: Dr. C. R. Scott, Twin Falls; Dr. A. M. Newton, Pocatello; Dr. J. N. Davis, Kimberly, were duly elected for the coming year.

Committee on Public Health and Legislation: F. W. Almond, Boise; F. A. Pittenger, Boise; F. W. Cole, Caldwell; were duly elected.

The place of meeting was Pocatello by unanimous consent, it being the custom to meet at the location of the President.

Time of meeting was left for the decision of the President and Secretary and committee on arrangements.

Joseph W. Davis
Secretary-Treasurer.

PROCEEDINGS OF THE THIRTY-SECOND ANNUAL MEETING OF IDAHO STATE MEDICAL ASSOCIATION, HELD AT COMMERCIAL CLUB, BOISE IDA., JUNE 20 AND 21, 1924.

The Thirty-Second Annual Meeting of Idaho State Medical Association convened in the Commercial Club rooms and was called to order by the President, Dr. F. A. Pittenger, of Boise, Friday, June 20, 9 A. M. The following members and visitors were present and registered during the session:

D. D. Drennan
O. W. Hall
Susan E. Bruce
R. T. Whiteman
J. M. Lyle
W. F. Howard

J. N. Davis
E. L. White
F. A. Pittenger
J. N. Alley
Ed E. Maxey
A. M. Newton

H. E. Lamb
J. M. Taylor
J. Harry Einhouse
H. C. Irwin
P. D. McCornack
J. F. Schmershall
W. A. Price
C. V. Genoway
C. H. Sprague
C. D. Cowles, Jr.
W. F. Smith
W. M. Mitchell
W. F. Passer
O. H. Avey
J. E. Froom
R. C. Coffey
W. A. Koelsch
T. N. Braxtan
H. D. Spencer
R. N. Cummings
R. L. McCalla
Chas. Wetherbee
C. S. Jones
H. P. Ross
L. C. Bowers
J. W. Davis
M. C. MacKinnon
E. E. Johnson
J. L. Stewart
E. E. Laubaugh
R. T. Hopkins
J. W. Smith
D. L. Alexander
H. H. McCarthy
F. W. Amond
C. A. Smith
L. F. McCalla
A. C. Spooner
Paul Davis
J. Carl Hill
R. L. Nourse
C. W. Pond
Wm. VanPatton
C. F. Clark
W. O. King
E. B. Carpenter
A. C. Jones
H. N. Leete
D. L. Blevins
B. O. Clark
J. W. Visher
C. L. Dutton
L. W. Chilton
H. C. Robinson
H. W. Stone
W. L. Frazier
G. E. Craner
G. R. Proctor
Ralph Falk

Report of the Committee on Arrangements was presented by Dr. E. E. Maxey.

Report of the Committee on Scientific Work consisted in the presentation of the program.

The Committee of Public Health and Legislation had no report to make.

Report of Secretary-Treasurer upon the financial standing of the Society, its membership and the condition of the Component Societies.

Secretary-Treasurer's Report

RECEIPTS

Balance on hand Jan. 1, 1924, received from 1923 Secretary	$ 1.09
Dues collected from Jan. 1, 1924, to date	960.50
Total	$ 961.59

DISBURSEMENTS

Freight and crating	$ 20.42
Stamps and supplies	30.35
Printing: Stationery, programs, etc.	78.25
Northwest Medicine, Oct., Nov., Dec. 1923	63.75
Stenographer	50.00
Telegraph and telephone	10.03
Fee on $500 bond given by Secretary	2.50
Refunds to Component Societies	164.00
Cash on hand	542.29
Total	$ 961.59

COMPONENT SOCIETIES

Members at Large		10
Bonner County	Paid up Members	11
Pres. F. G. Wendle, Secy. W. R. Wallentine, Sandpoint		
Bear Lake County	Paid up Members	5
Pres. E. F. Guyon, Secy. G. F. Ashley, Montpelier		
Canyon County	Paid up Members	22
Pres. H. R. Ross, Nampa, Secy. R. G. Young, Caldwell		
Idaho Falls	Paid up Members	12
Pres. H. D. Spencer, Secy. F. W. West, Idaho Falls		
Kootenai County	Paid up Members	10
Pres. John T. Wood, Secy. J. H. Sturges, Coeur d'Alene		
North Idaho District	Paid up Members	23
Pres. J. W. Stevenson, Secy. J. H. Sinhouse, Moscow		
Nez Perce County	Paid up Members	20
Pres. P. W. Johnson, Secy. W. O. Clark, Lewiston		
Pocatello	Paid up Members	24
Pres. T. F. Mullen, Secy. G. H. Sprague, Pocatello		
Shoshone County	Paid up Members	5
Pres. C. E. Stone, Secy. J. R. Bean, Wallace		
South Side Medical	Paid up Members	47
Pres. H. N. Leete, Secy. W. F. Passer, Twin Falls		
South Idaho District	Paid up Members	56
Pres. Geo. Waterhouse, Secy. F. W. Almond, Boise		
Upper Snake River	Paid up Members	12
Pres. Harley Nelson, Rexburg, Secy. R. H. Fisher, Rigby		
	Total	254

The President's Address, Dr. F. A. Pittenger.

Moved by Dr. Maxey, seconded by Dr. J. N. Alley, that the President's address be referred to the House of Delegates for action. Carried.

Moved by Dr. Maxey and seconded by Dr. Newton that the meeting adjourn until 2 P. M. and that an executive session of the House of Delegates be called at once. Carried.

Afternoon Session, 2 o'Clock

This session was given over entirely to scientific work.

Major Van Patton, of the Veterans Hospital No. 52, substituting for Col. Maddox, gave an able discussion of the various laws and regulations affecting the sick veteran and their application.

Dr. J. F. Schmershall, of Jerome, read a paper on the "Diet of the Diabetic: Its Preparation and Application."

Dr. C. H. Sprague, of Pocatello, presented the subject of "Diabetic Treatment."

Both papers covered very thoroly their respective phases of the subject, in the light of recent dietetic and insulin discoveries. Discussion was opened by Dr. E. E. Laubaugh, of Boise.

Dr. P. D. McCornack, of Spokane, read a most excellent paper on "Common Sense in Infant Feeding." Discussion opened by Dr. W. F. Passer, of Twin Falls.

A lecture was delivered by Dr. W. A. Price, of Cleveland, Ohio, on "Newer Knowledge of the Role of Calcium in Health and Disease." Illustrated with lantern slides, this more than filled the remaining part of the session.

Adjourned to meet at 7:30 P. M.

Evening Session, 8 o'Clock

Lecture by Dr. W. A. Price, "Some Helpful Details in the Diagnosis, Prognosis and Treatment of Dental Focal Infections in Relation to Systematic Disease."

This lecture occupied the entire evening and was listened to by a full house.

Saturday, June 21, 9 A. M.

"Industrial Ophthalmology," a paper prepared by Dr. Joseph Clothier of Pocatello, was read by Dr. R. L. Nourse, of Boise, in the absence of Dr. Clothier. This paper discussed the prophylaxis, nature and cause of such injuries.

The next paper was by Dr. C. D. Cowles, of Boise, on "Tissue Grafts in the Orbit" with presentation of a case, illustrating the beautiful results obtained in thus building a movable stump in the eye socket for an artificial eye.

Dr. R. L. Nourse discussed this paper, showing a similar case.

"Simple Goiter," was presented by Dr. H C. Irwin, of Pocatello. This was a scholarly resume of the simple goiter conditions of today, its cause, distribution and treatment. This paper was ably discussed by several, Drs. D. L. Alexander of Twin Falls and Dr. W. F. Howard of Pocatello leading. The subject of a goiter survey was brought up in this connection and a report made of the results of a questionaire sent out by Mr. Paul Davis upon the desirability of making such a survey. This was sent to 250 doctors, of whom 130 replied and of these 74 reported the treatment of 4210 cases within the past five years.

Upon motion a committee was appointed by the president to consider the advisability of pushing this survey. This committee was appointed: C. M. Cline, Idaho Falls; F. W. Almond, Boise; W. F. Howard, Pocatello; Max T. Smith, Wallace.

The last paper of the morning was "Maxillary Sinusitis." This was an able treatise on the cause, results and treatment of this condition, with presentation of case histories. Dr. A. C. Jones opened the discussion.

Afternoon Session, 2 o'Clock

Mr. L. E. Worstell, chairman of the Industrial Accident Board of the State of Idaho, read a very interesting and instructive paper upon the Workmen's Compensation Act of the State of Idaho, with particular reference to the medical problems presented in connection therewith.

This paper aroused general discussion, led by Dr. Alexander, of Twin Falls; Dr. Drennan, Coeur d'Alene and Dr. Einhouse, Moscow. The question of fees was the "bone of contention," and it developed that both the physician and the department have cause for complaint.

The "State Association Journal" was the topic for discussion by Dr. Clarence A. Smith, editor of that publication for the states of Idaho, Oregon, Washington and the official paper for Montana State Medical Assn. He discussed the relative value of such journals as published by the various state medical societies and their cost, asking for an increase from one dollar to two dollars in the subscription price. The Oregon Medical Association has set aside such an increase and Washington is preparing to do so.

Upon motion made by Dr. Visher, of Twin Falls, a vote of thanks was extended Dr. Smith for the most excellent journal he publishes under the name of Northwest Medicine.

Upon motion of Dr. E. E. Maxey an amendment was proposed to the Constitution, increasing the annual dues to six dollars, which will provide for the two-dollar subscription rate. This motion carried and thus constitutes the first legal reading of such amendment which will receive final action before the House of Delegates at its next annual meeting.

Dr. W. A. Price closed the program with his lecture, "Dental Infection, Oral and Systematic, and Degenerative Diseases," Lantern demonstration added to the instructiveness and interest of this talk. It is too large a subject to brief, as those of you who heard it know.

Adjourned to meet at Pocatello, 1925.

JOSEPH N. DAVIS
Secretary-Treasurer.

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PACIFIC NORTHWEST MEDICAL ASSOCIATION

MINUTES OF MEETINGS OF THE COUNCIL OF PACIFIC NORTHWEST MEDICAL ASSOCIATION, VANCOUVER HOTEL, VANCOUVER, B. C., JUNE 25, 1924

Morning Session, 10 o'Clock

The Council was called to order by the President, Dr. H. Dudley. Those present were: Drs. H. D. Dudley, A. S. Monro, E. M. Larson, J. L. Stewart, P. J. Bartle, E. A. Sommer, N. W. Jones, J. R. Brown, R. T. Congdon, J. W. Gue, L. W. Chilton, Donald Campbell, F. F. Attix, H. R. Storrs, Joseph Morrell, George Peterson, J. E. Else, F. Epplen.

The minutes of the previous meeting were read in abstract and approved.

The auditor's report of the LeMaster & Cannon Company was read. This report covered both the Spokane and Seattle meetings. It was referred to the auditing committee which consisted of Drs. J. W. Gue, E. M. Larson and J. R. Brown. It was moved by Dr. Else and seconded by Dr. Brown that the auditing committee review this report and recommend various procedures suggested by the accountants.

Dr. Dudley announced that the council had not adopted an order of business. It was moved by Dr. Sommer, seconded by Dr. Else, that Roberts' Rules of Order and Order of Business be adopted to govern the proceedings of the Council. So ordered.

Moved by Dr. Else, seconded by Dr. Gue, that a committee of three be appointed to suggest a plan for permanent membership and work up an amendment to the constitution to conform to the same. This was discussed by Drs. N. W. Jones and E. A. Sommer, who proposed a plan for a "working fund" as a substitution and that membership be divided into two classes, active and inactive, the active to pay a small annual fee and to control the organization, and from which the officers are to be chosen. The inactive members are to pay fees only when they are present at the meetings. A second plan was suggested by Dr. Jones, which was for a working fund for the organization from men who are interested in medical education, so that the program committee and the executive officers would at all times have the necessary funds to work with. Dr. Epplen discussed the question briefly. Moved by Dr. Jones, seconded by Dr. Sommer, that the matter be referred to a committee of three. So ordered. The president thereupon appointed Drs. N. W. Jones, E. A. Sommer and Donald Campbell on this committee.

Dr. E. A. Sommer objected to the return of membership fees once paid to the secretary-treasurer on the ground that the payment of fees was an expression of an intention to attend the meeting and the organization should regard this money as having been paid in good faith and therefore available for expenses of the meeting. Dr. Epplen reported that the return of fees had been: one to a full-time teacher of medicine in the University of Oregon Medical School, one to a physician who had been injured just after having paid his fee and whose expenses were such that it would warrant the association taking a charitable view and returning his money. and the third case of a councilor of the association, where business reverses led to the necessity of returning his money. Dr. Gue took the attitude that under certain circumstances the return of fees was necessary to encourage early registration. Dr. Epplen and Dr. Else voiced opposite views.

Dr. Else suggested that, if a permanent membership were to be established, they were to have a cheaper membership fee than the casual member. Dr. Dudley ruled that the matter would be referred to a committee on permanent organization.

Dr. A. S. Monro made a report for the local arrangements committee, stating that there had been a great deal of difficulty in getting prospective members in attendance at the Vancouver meeting to make early reservations for hotel rooms. As a result he expected there would be considerable confusion and difficulty in placing members. In order to take care of these the local committee had made arrangements for fifty rooms in private homes of friends or physicians which were being furnished gratis for those who did not find suitable hotel rooms.

All arrangements for speakers have turned out satisfactorily and all will be in attendance except Dr. Lyle Cummings, of Cardiff, Wales, who is sick in a London hospital. At the last moment Dr. Joseph Pratt, of Boston, has been arranged for to take his place.

The ladies' entertainment was arranged for by a special committee and a complete program has been published of the plans for them.

At noon today, at 12:45, the councillors and officers of this association are invited to a luncheon jointly with the British Columbia Medical Association, at which time Dr. Cotton will address the meeting on "Industrial Surgery." This luncheon is to be in the Ambassador Cafe. Tonight, at 6:45, there will be a dinner at the Vancouver Club for the speakers of the association, the council and officers and the medical officers of the British Fleet at anchor in the harbor. Immediately following this, at 9 o'clock, the council and officers will adjourn to the session of the British Columbia Medical Association in the Board of Trade, where Dr. Kinnear Wilson will address the meeting on "Conflict in Medical Opinion."

Dr. Monro reported that the total expenditures at the end of the meeting will be not to exceed $1,600, and that the cost of speakers will be approximately $1,500, making a grand total of $3,100 for the expenses of the meeting.

Sir John Thompson Walker will give an operative clinic at the Vancouver Hospital Saturday morning, which will be announced later from the platform of the assembly. This is to be limited to those interested in neurologic surgery.

It was recommended by Dr. Monro for the local committee that the following men preside at the various sessions of the scientific sessions: Dr. H. D. Dudley, Thursday morning; Dr. J. M. Pearson, Thursday afternoon; Dr. E. A. Sommer, Thursday evening; Dr. B. D. Gillies, Friday morning; Dr. J. E. Else, Friday afternoon; Dr. E. M. Larson, Friday evening; Dr. J. W. Gue, Saturday morning; Dr. Joseph Morrell, Saturday afternoon.

The report of Dr. A. S. Monro was accepted by the chair for the Council.

The chair brought up the question and asked for discussion on the need for a president-elect of this association. Dr. Else spoke upon the need of an apprenticeship for the president during a period of one year, when he should serve as president-elect. He felt that the custom should be continued and that he should be elected from the various states and provinces in the territory in rotation, to permit every district to be represented at some time or another. Dr. Dudley felt himself less favorably inclined, especially because this will bring about a condition whereby the president will frequently preside at meetings and be responsible for committees in cities at a considerable distance from his home, and therefore he will not be in close touch with the meeting for which he will be responsible. He felt that the president should come from the city in which the meeting was to be held. It was moved by Dr. Epplen, seconded by Dr. Storrs, that the question be left to the nominating committee for recommendation.

Dr. Epplen brought up for discussion the question of whether or not it would be wise to keep Utah and Saskatchewan in the territory of the association. Dr. Morrell spoke on behalf of Utah, stating that there will always be a number of men present from Utah but any membership in the council would always be of doubtful value to the organization because their attendance would be precarious. He felt there would also be a number of men who would support the organization by the payment of annual dues whether they attended or not. He stated that Utah withdrew from Northwest Medicine as its official journal because of the proximity of California and the close association in railroad connections with southern and central California. Dr. Monro spoke in behalf of Saskatchewan, stating that the number of attendants from that province would always be small in number until roads were better and automobile travel would bring a greater number of men. He suggested that we must cut down the expenses of circularizing Saskatchewan until attendance was better. Dr. Jones objected to the item of expense being given serious consideration, so long as we are able to draw the province to us and thereby the inhabitants of the Dominion to the United States. Dr. Peterson, of Saskatoon, the first time in attendance at the Pacific Northwest Medical Association, spoke on behalf of Saskatchewan, promising to enlist the interest of the physicians in that province and asked that Saskatchewan be retained. Regularly moved by Dr. Epplen, seconded by Dr. Jones, that Utah and Saskatchewan be kept in the organization of the Pacific Northwest Medical Association, and that the local committee in each case decide to what extent these territories be circularized. So ordered.

Dr. George Peterson suggested that Dr. A. McGee Young, of Saskatchewan, secretary of the Saskatchewan Provincial Society, would supply the secretary with the officers of the various district organizations in that province, thru whom the membership of the Saskatchewan profession could be informed of prospective meetings of the Pacific Northwest Medical Association.

Dr. N. W. Jones spoke on the most important movement of the day as that which is bringing all English-speaking people together. He felt that the Pacific Northwest Medical Association would be an organization that would wield a tremendous influence in bringing this movement to a successful conclusion, and felt that the successful union of the English-speaking people was of paramount importance, expense and other considerations not to be weighed in the balance.

Dr. Homer Dudley spoke on the relationship of the University of Washington extension course and the Pacific Northwest Medical Association, suggesting that the two were separate and distinct organizations; that they had different functions and should not attempt to join hands in any matter; there should be no conflict between the same, and he felt there would be none in the future.

The chair appointed the following nominating committee: Drs. J. E. Else, Joseph Morrell, F. F. Attix, George Peterson and H. R. Storrs.

Adjournment until 4 P. M.

Afternoon Session, 4 o'Clock

At roll call the following members were present: Drs. H. D. Dudley, A. S. Monro, E. M. Larson, J. L. Stewart, P. J. Bartle, E. A. Sommer, N. W. Jones, J. R. Brown, R. T. Congdon, J. W. Gue, L. W. Chilton, Donald Campbell, F. F. Attix, H. R. Storrs, Joseph Morrell, George Peterson, J. E. Else, F. Epplen.

The nominating committee, in the person of its chairman, Dr. J. Earl Else, reported the following candidates for the respective offices: President-elect, Dr. E. M. Larson, Great Falls, Montana; First Vice-President, Dr. J. L. Stewart, Boise, Ida.; Second vice-president, Dr. George Peterson, Saskatoon, Saskatchewan. For councilors to hold office until 1927: Oregon, Dr. P. J. Bartle, Eugene; Washington, Dr. E. T. Richter, Spokane; Idaho, Dr. J. W. Gue, Caldwell; Montana, Dr. W. J. Marshall, Missoula; Utah, Dr. E. T. Root, Salt Lake City; British Columbia, Dr. A. Cummings, Vancouver; Alberta, Dr. E. J. Connor, Lethbridge; Saskatchewan, Dr. George Peterson, Saskatoon. Dr. F. A. Corbett, of Regina, was nominated for a short term in Saskatchewan.

The recommendations of the nominating committee were: first, that the offices of the first and second vice-president be regarded as honorary offices and not necessarily in line for the presidency; second, that there be no change from the present by-laws in regard to the president-elect.

It was regularly moved by Dr. Storrs and seconded by Dr. Gue that the report of the nominating committee be received by referring it to the general assembly on Saturday morning, June 28, for approval and counternominations, if any were desired.

The report of the auditing committee, read by Dr. John R. Brown, was as follows: "We, the undersigned members of the auditing committee, have inspected the secretary-treasurer's books and the trial balance, together with the reports of the public accountants on the same and find them to be correct and understandable with one exception, which will be mentioned below.

"We recommend the following measures to be adopted for the expediting of the business of the association:

(1) "That membership cards be issued with proper stubs to be filled out and retained as a check on the membership. That the cards and stubs be numbered in duplicate by numbering machine. These cards must be issued to every member before registration is permissible.

(2) "That a complimentary ticket should have the word 'complimentary' written across its face and stub, and signed by the official issuing the same.

(3) "That the fees of $1,375.00, paid the speakers at the Spokane meeting, be ratified by the council.

(4) "That hotel expenses of $325.63. paid for speakers at the Spokane meeting, be ratified by the council.

(5) "That fees of $2,155.00, paid to speakers at the Seattle meeting, be ratified by the council.

(6) "That the sum of $694.03, paid ushers, clerks, etc., at the Seattle meeting, be ratified by the council.

(7) "It is further recommended that the practice of having the president countersign all the checks drawn be continued.

(8) "That the practice of having a public accountant audit the accounts of the secretary-treasurer be continued."

It was moved by Dr. Epplen and seconded by Dr. Sommer that the report of the auditing committee be accepted and placed on file.

In explanation of the request that the purpose be explained for which check No. 17, drawn on the Metropolitan National Bank by Homer D. Dudley, be stated at the next meeting, this check had been drawn for various incidental expenses, such as rent of furniture, payment of stenographer's salary, clerk hire and various other incidental expenses to the maintenance of an office of the association prior to the Seattle meeting. The public accountant should have so stated in his report, as the documents necessary to give this information were in his hands.

It was moved by Dr. Sommer, seconded by Dr. Campbell, that the report of the auditing committee be adopted as read.

It was regularly moved by Dr. Storrs, seconded by Dr. Else, that the council ratify the action of the secretary in paying the expenses and honoraria to speakers at Spokane and Seattle, and expenses for expenditures for ushers, doorkeepers, stage hands, etc., and that the auditing committee report be ratified by the council. So ordered. The committee on permanent membership and permanent working fund recommended: First, that there would be no changes in the membership for the next year; second, the undersigned committee submits the following recommendations, working for the establishment of a permanent working fund for use by the officers and program committee of this association: (1) That the secretary of the association circularize the medical profession of the Pacific Northwest, stating the (a) educational aims of the associations, (b) need of obtaining at first hand the work of investigators in medical and allied sciences, as well as that of clinicians of note, and (c) the advisability of the association having at its command the use of a permanent fund of two or three thousand dollars for the better buildiug of its programs from year to year; (2) that members of the profession and others be given the opportunity to make donations to the association to that eud and thereby become enrolled as patrons of the association; third, the recommendation that these steps be taken at an early date to establish such a fund.

Respectfully submitted,

(Signed) DONALD CAMPBELL
E. A. SOMMER
N. W. JONES.

It was moved by Dr. Sommer, seconded by Dr. Campbell, that the report be adopted. The report was further discussed by Drs. Sommer, Jones, Dudley, Else and Epplen. The question being submitted it was so ordered.

The invitation for the meeting for the year 1925 was tendered on behalf of the Portland City and County Society by Dr. J. Earl Else that the meeting be held in the city of Portland. Moved by Dr. Gue, seconded by Dr. Morrell, that the invitation be accepted with thanks. So ordered.

The facilities of Glacier National Park were explained by Dr. E. M. Larson in a letter which he had from the traffic department of the Great Northern Railway, by its general passenger and freight agent, Mr. L. B. Woods, which he herewith appended. Moved by Dr. Sommer, seconded by Dr. Storrs, that these letters be placed on file.

Moved by Dr. Storrs, seconded by Dr. Monro, that a vote of thanks be extended to Dr. N. W. Jones for taking his valuable time in coming to the meeting of the councillors, although not able to attend the scientific session because of an absence of over a year, and furthermore for his great help in getting speakers from London to attend the meeting. It was so ordered unanimously.

Dr. Jones then made certain suggestions of value to the association in connection with the possibility of choosing speakers for next year. Sir Arthur Keith was characterized by him as the modern John Hunter of the English profession, simple in taste, lionized wherever he goes. He suggested him for the 1925 meeting. He suggested Sir Almeroth Wright, an extremely valuable worker in problems of immunity and particularly in the bacteria type of asthma, among which he has studied carefully the intestinal strains; Allen Drury, of the Department of Cardiology, London University, on cardiology, physiology—normal and pathologic; Dr. Rist, of Paris, the greatest living authority on tuberculosis in Europe. Dr. Rist is available.

Dr. J. Earl Else spoke on the work of the Tri-State (Wisconsin, Illinois, Iowa) Medical Association in arranging a clinical tour of Europe, suggesting that we might do the same, beginning with an American tour. Moved by Dr. Else and seconded by Dr. Congdon that such a trip be sponsored in the near future. So ordered. Dr. Else stated further that invitations for the next year Tri-State Foreign Tour have been extended by that association to any recognized physician to attend.

Moved by Dr. Epplen, seconded by several men, that the council extend a hearty vote of thanks to the Vancouver arrangements committee for their splendid work and indefatigable efforts toward a successful meeting in Vancouver this year. So ordered.

Adjournment moved by Dr. Sommer, seconded by Dr. Else. So ordered.

PUBLIC HEALTH LEAGUES

WASHINGTON

LEAGUE CONVENTION AT EVERETT

The Public Health League of Washington will hold its annual meeting in conjunction with the Washington State Medical Association convention at the Big Four Inn near Everett on August 13. The program includes the annual address by the president, Dr. H. J. Whitacre of Tacoma, a statement of the future plans of the organization by Dr. E. Weldon Young of Seattle, executive chairman, and the report of the executive secretary. Among those from other Leagues expected to be present are Frank Ward, executive secretary of the Oregon Public Health League, and Dr. E. E. Maxey, secretary-treasurer of the Idaho League. Dr. Maxey has recently located at Aberdeen.

One of the interesting features of the convention will be the discussion of the League campaign against goiter. General plans will be laid for a renewal of the goiter campaign by the organization at the opening of the school year in September.

PRESIDENT SUZZALLO HEADS LAY BUREAU

Moving ahead with their purpose of making the League a real power for the public health and in the direction of giving it a wide outlook, the officers are arranging for a lay bureau in the organization, which will include five of the most prominent citizens of Washington. Dr. Henry Suzzallo, President of

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the University of Washington, has accepted the chairmanship of this branch of the League effort. Dr. Suzzallo has shown exceptional interest in the medical extension course of the university and has evinced lively regard for the fight that is being waged to protect and raise standards of healing in the state. The other members of this committee have not as yet been selected, but it is expected that the bureau personnel will be completed within a short time.

BUREAU OF PUBLIC HEALTH NURSES ESTABLISHED

The League has completed its Bureau of Public Health Nurses. It consists of five nurses engaged in public health work in the state. The members of this bureau are: Miss L. S. Erickson, Seattle; Miss Ella Joyce, Seattle; Miss Edna Mason, Spokane; Mrs. Mary Louise Allen, Ellensburg; Miss Margaret J. Diaz, Bellingham. With the completion of this administrative unit, the League has established contact with the nurses, dentists, pharmacists and dietitians.

FIFTEEN HUNDRED ATTEND HEALTH MEETING

Making a new record for attendance at a health meeting in the state, the League medical lecture course for the public was well received on the evening of July 15, at the First Presbyterian church in Seattle. Taking advantage of the University of Washington Medical Extension Course, thru the courtesy of the University officials and the King County Medical Committee, the three world-famous specialists, Sir John Herbert Parsons of London, England, Professor John Osborn Polak, of Long Island Hospital and Professor Elliot P. Joslin, of the Harvard Medical School, were presented to the public. Fifteen hundred people crowded into the church to hear health messages from these distinguished men and the talks were very well received.

HOSPITAL STANDARDIZATION

Edited by HERBERT E. COE, M.D.

NAVY MEDICAL OFFICERS

The standardized hospitals of the Puget Sound district have a responsibility and a privilege in connection with the presence there each summer of the battleship fleet. There are some thirty or forty medical officers of the Navy attached to these ships, many of whom would welcome the opportunity to see work in the various local hospitals.

Too often the opinion is heard that the Navy medical officer is chiefly concerned with drawing his pay and, while it is no doubt true that there are isolated instances of this type of individual, he is no more frequently found in the Navy Medical Corps than in any group of professional men of that size and environment. A large proportion of the Navy medical officers are energetic, capable men who are ready and eager to take advantage of any advances in medical science and practice. Their work when aboard ship has certain restrictions, due to the rather fixed type of patients with whom they come in contact, but they are subject to transfer to Navy yards and other shore stations, where they are required to care for the families of officers and men and on this account many of them feel the need of frequent association with medical men who are doing general practice and with other men who are doing special lines of work.

The standardized hospitals accessible to the medical officers of the fleet can perform a most acceptable act of courtesy by extending to them thru the fleet surgeon a very definite invitation to come to the hospitals at any time they are able to do so. Such an invitation should give the location of the hospital, how it may be reached, clinics or special demonstration days if any, and should be signed by the Superintendent, or the Chief of Staff, or some other responsible person to whom a visiting medical officer can introduce himself and who can give him such introductions and directions as will enable him to see the kind of work which he wishes. The fleet surgeon may be addressed as, "The Fleet Surgeon, Flagship Battleship Fleet, care Postmaster, Seattle," at any time while the fleet is in Puget Sound waters.

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Modern Methods of Treatment. By Logan Clendening, M.D. Assistant Professor of Medicine and Lecturer on Therapeutics, Medical Department, University of Kansas, etc. With Chapters on Special Subjects by H. C. Anderson, M.D., J. W. Cowherd, M.D., Carl O. Rickter, M.G., F. C. Neff, M.D., E. H. Skinner, M.D., and E. R. DeWeese, M.D. Cloth, 692 pp. $9.00. Illustrated. C. V. Mosby Co. St. Louis. 1924.

This book is truly admirable in its conception and treatment. The title gives but an inadequate idea of its excellence. In 1906 Forcheimer gave to the profession his work on prophylaxis and treatment of internal diseases and this book, which was reviewed in this journal, went thru many editions and met with great favor. The present volume is perhaps even better and of course represents all that is best in most recent thought and practice. It is not in the least a mere compilation of the various forms of recent treatment. It is primarily a comprehensive discussion, first of the many means of cure, as drugs, biologic therapy, exercise, heat, diet, cold, etc., and, second, a discussion of the treatment of specific diseases. In this discussion the why's, wherefor's, and why not's are considered and weighed in a way that shows the wide, wise and trained experience and excellent judgment of the author. The therapeutic means advocated and those decried appeal to the reviewer so poignantly and seem so right that it is impossible not to commend the work in the highest terms for its uncommon sense. Of course the value of such works cannot be very permanent but in a sense all medical books are born dead, except those on anatomy—a dead subject.

The author finds no specific value in vaccines, and

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CAPACITY—NINETY BEDS

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stock vaccines are utterly unscientific and useless, except as a convenient form of administering non-specific protein, or in the case of the typhoid-paratyphoid vaccine. This is commonly accepted now by many and the reviewer has seen better results from typhoid vaccine in gonnococcic arthritis than from specific vaccine. The writer also condemns cold vaccines but in practice they have seemed to the reviewer to possess much worth, perhaps simply as foreign proteins. The comments on arsphenamine in this book are most satisfactory, especially the summary of all the ill effects that may result from the remedy and proper methods of avoiding them. There is no better guide than this book in the use of digitalis as now given.

Under treatment of special diseases we select universal congenital asthenia. In all his remarks on this common trouble the writer shows the best sense and judgment, even in the choice of name, altho he does not give Stiller credit for its origin. If doctors only looked upon it in this light (as congenital general weakness) they would cease removing appendices, and suspending wombs and stomachs, and devote their energy to improving the general health as herein described, and no treatment is more gratifying and profitable to both patient and physician than in this disease. If the sanity of an author may be estimated by his reactions to endocrines and their therapeutic employment, then the author may feel that he is in no danger of commitment and incarceration. Since Forcheimer this is the best work of the kind we have seen and it represents the most rational, modern, medical therapeutics.

WINSLOW.

1923 Collected Papers of the Mayo Clinic and the Mayo Foundation. Rochester, Minnesota. Octavo of 1377 pages, 410 illustrations. Philadelphia and London. W. B. Saunders Company, 1924. Cloth, $13.00 net.

The annual collection of papers representing the scientific and clinical work of the Mayo Clinic and Foundation has become one of the most valuable medical publications in this country and an index of the progress of medicine in the world. The scope of the work is now so large that it will be of value to all practitioners of every branch of medicine. The reviewer will only notice a few of the topics considered.

The article by Willius on angina pectoris and surgery of the abdomen is of as much interest to the internist as to the surgeon. Two most important observations of W. J. Mayo are quoted. The first is that angina of coronary origin in women may be present for a time and then cease permanently. The angina is rarely so serious in women as in men. This fact has impressed the reviewer and is in line with the experience and teaching of MacKenzie. The other fact is the association of angina with abdominal pathology. In about one-quarter of 86 cases with coronary sclerosis gallbladder disease was found in autopsies. William Mayo has emphasized the relationship of angina to gallbladder infections and has found improvement of the angina following surgical interference in selected cases. Another monograph by Willius and Barnes on 140 cases of syphilitic aortitis is also very instructive. There was a positive Wassermann test in 101 cases; symptoms occurred from 17 to 20 years after the primary lesion.

There are three very scholarly and thoughtful papers by William J. Mayo among the miscellaneous collection in the latter part of this volume. Of special value are his comments on the "three great plagues," coming from a man of his extraordinary mentality and experience. There are most important monographs by Charles Mayo and Plummer on goiter, embodying their latest treatment with iodine.

The title given this volume by the publishers may be misleading in that it contains some 287 papers in full, and many others by title. The "1923 collected papers" refers to the year of their publication.

WINSLOW.

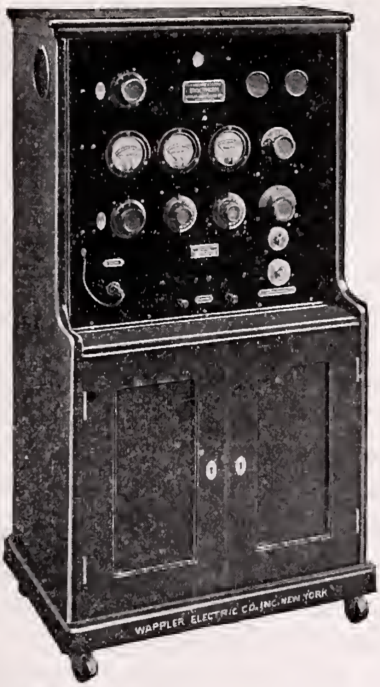
Diseases of the Eye. A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. de Schweinitz, M.D., LL.D. Professor of Ophthalmology in the University of Pennsylvania. Tenth Edition, Reset. Octavo of 865 pages with 434 illustrations and 7 colored plates. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 net.

This is one of the standard textbooks of ophthalmology and needs no introduction. In this edition the subject matter and arrangement are the same as formerly. Sufficient changes and additions have been made to keep the work well abreast of the times. Thus the newer methods of illumination, in examination, together with the knowledge derived from their use, therapeutic and operative procedures that have recently attracted attention, as milk injection, butyn anesthesia, cataract extraction by suction, recession, etc., may all be found in this latest edition. Thruout the book references have been made to the original articles quoted therein. It is an excellent work equally for the student, general practitioner and specialist.

BULL.

Operative Surgery. Covering the Operative Technic involved in the operations of general and special surgery. By Warren Stone Bickham, M.D , F.A.C.S. Former Surgeon in charge of General Surgery, Manhattan State Hospital, New York. Former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In six octavo volumes totaling approximately 5400 pages with 6378 illustrations, mostly original and separate. Desk Index Volume. Volume 4 containing 842 pages with 772 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 per volume. Sold by subscription only. Index Volume Free.

Whenever one purchases a book from Saunders he may be quite certain of three things, namely: That the author is likely to be one of the most prominent of the American physicians or surgeons; that the book will be well printed and well bound; that it will be liberally illustrated. The present volume, the fourth in the series of six on Operative



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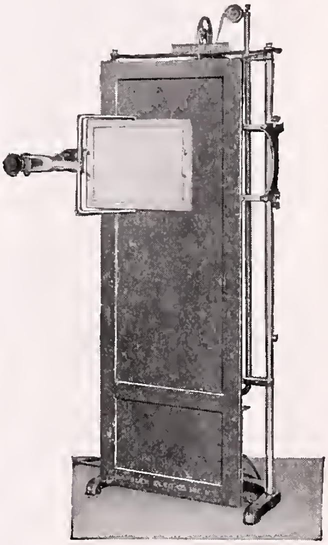

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Surgery, deals particularly with the surgery of the heart, the abdominal wall, and the gastrointestinal tract It is profusely illustrated by drawings which possess the unusual virtue of conforming to and supplementing the text. At the beginning of each chapter there is an index, giving the page on which any particular operation may be found.

A distinctive feature is the discussion of surgical anatomy, compact, concise, and as comprehensive as is necessary. Following this there is a concisely complete discussion of the surgical considerations. There is little one can say, other than commendation of the book, its make-up, its authorship and its value to any one interested in surgery and surgical problems. The omissions are very few, but even if one wonders why, in the discussion of operations for femoral hernia, the operation advocated by Moschowitz should be left out, he may yet be recompensed by the excellent discussion of the problem itself. It is an invaluable book to the general surgeon.

Sturgis.

Pathological Technique. A Practical Manual for Workers in Pathological Histology and Bacteriology, including directions for the performance of autopsies and for clinical diagnosis by laboratory methods. By Frank B. Mallory, M.D., Pathologist to the Boston City Hospital; and James B. Wright, M.D., Pathologist to the Massachusetts General ospital and Assistant Professor of Pathology, Harvard Medical School. Eighth Edition, revised and enlarged. Octavo of 666 pages with 180 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $6.50 net.

For nearly three decades this work has been a standard for pathologic technique. Thru the various editions it has kept abreast of the times and is most valuable as a reference on all matters relating to pathologic examinations. Collaborators have aided in preparing this new edition, revising the subjects of bacteriology, serum diagnosis, histologic blood examinations, central nervous system and spinal fluid. This seems to have improved the work, making alive these subjects, instead of remaining a dry relation of fact. Those engaged in any form of laboratory work cannot well afford to be deprived of the use of this volume.

West.

Eat Your Way to Health. A Scientific System of Weight Control. By Robert Hugh Rose, A.B., M.D., Instructor, Postgraduate Medical School, New York. New Edition, Thoroly Revised and Enlarged. 230 pp. $2.00. Funk and Wagnall Company, New York and London. 1924.

The purpose of this volume is instruction in the matter of reducing and controlling weight thru the proper selection of diet. It is especially a nontechnical guide for laymen. The author states, "The real art of weight reduction consists in carrying the extremely heavy patient thru a loss of from fifty to eighty pounds without his feeling lassitude or similar symptoms." The causes of obesity are given as laziness, self--indulgence, lack of will-power and ignorance. There are chapters on estimation of food values, with descriptions of the composition of various foods, with instructions as to their selection for reduction or maintenance of weight. Two hundred fifty menus are listed with directions for their use for two week periods during the summer and winter. The volume contains much of value, expressed in terms understandable by any reader.

Smith.

Dislocations and Joint-Fractures. By Frederick J. Cotton, M.D., Visiting Surgeon to the Boston City Hospital; Associate in Surgery, Harvard Medical School. Second Edition, Reset. 745 pages with 1393 illustrations from drawings by the author. Philadelphia and London: W. B. Saunders Company, 1924. Cloth $10.00 net.

This edition is one of the most complete books that has been written on the subject of dislocations and joint-fractures. Every joint is taken up in detail, giving the usual deformity with its method of reduction and treatment. The most valuable part of the book is discussion of the fractures that run into the joints. The author not only takes up the usual types of fractures that involve the joints but describes the unusual ones and gives very many valuable suggestions as to treatment. Anyone treating joint fractures will find many valuable suggestions in this volume.

Buckner.

The Medical Clinics of North America. (Issued serially, one number every other month.) Volume XIII, No. 1, July, 1924. By Internists of New York City. Octavo of 426 pages with 106 illustrations. Per clinic year (July, 1924, to May, 1925.) Paper $12.00 net. Cloth 16.00 net. Philadelphia and London. W. B. Saunders Company.

This volume contains clinical reports on a great variety of subjects by prominent writers connected with medical schools and hospitals of New York city. Cardiac disturbances occupy a prominent position, seven reports dealing with various phases of these conditions. Levy discusses cardiac pain in an instructive manner, demonstrating how loosely is the term angina employed with reference to heart pain which might arise from a great variety of conditions. The discussions of primary carcinoma of the liver, by von Glahn and Lamb, is based on the report of four cases. Buerger in the discussion of pyelitis shows that ascending infection, commonly discredited by the authorities, is in many cases an actuality. The volume contains much food for profitable meditation.

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ADDRESS

CAN THE ORGANIZED PROFESSION PREVENT STATE MEDICINE AND UNJUST FEDERAL TAXATION?*

Richard C. Monahan, M.D.
BUTTE, MONT.

In this day of restlessness, dissatisfaction and grasping for the luxuries of life, the profession must exercise care that the general trend of the times does not draw it into the whirlpool of desires to the debasement of its time-honored and respected ideals and convert its professional idealism into business acumen and trades-union selfishness. Respect for self and for our profession demands that our services be adequately recompensed and that our financial burdens be given fair consideration thru legislation, both federal and state.

The medical profession's cause for complaint concerning federal taxation is under the Harrison narcotic act, as amended by the Revenue act of 1918, by which excessive and unnecessary war tax is imposed. A physician is compelled to pay an income tax on his earned income at the same rate that the taxpayers generally are taxed on an income from invesetments. The profession is not protesting the Harrison narcotic act nor against taxation that may be necessary to give the federal government jurisdiction. The act originally fixed a tax of one dollar a year, and of that tax no complaint was made. The rate fixed by the Revenue act of 1918, a war measure, of three dollars a year is unjust.

Argument in favor of the deductibility of traveling expenses and the cost of postgraduate study in computing a physician's income tax should be protested on the grounds that the physician is denied the rights that other trades and businesses are allowed. Other businesses are allowed traveling expenses, including amounts spent for meals and lodging while away from home. The commissioner of internal revenue has ruled that the physician away from home while pursuing postgraduate study is not away in the pursuit of his profession, and such expenses are regarded by the commissioner as personal expenses.

Why does the lawyer get ten dollars for making out a lease that any trained stenographer can fill out in ten minutes? The physician gets one to three dollars for diagnosing and prescribing for his patient's ills, the correction of which will keep him fit to earn thousands.

Why are attorneys able to collect their fees in advance and doctors a year after services are rendered, if they ever get them? Why do doctors give away one hundred million dollars worth of free service a year in hospitals, clinics, homes and office treatment, while other men give nothing? Why do legislatures concede to lawyers practically every request they make for laws increasing the emoluments and safeguarding the interests of their profession, and refuse practically all requests for increasing the emoluments and protecting the interterests of the physicians engaged in public health work and otherwise? Why do insurance companies only pay a fee of from one to five dollars when an applicant takes a policy for twenty-five thousand dollars and the agent is paid fifty per cent of a six hundred dollar premium?

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*President's Address, read before the Forty-sixth Annual Meeting of Montana State Medical Association, Helena, Mont., July 9-10, 1924.

Why does a secretary of an industrial accident board presume to adopt a fee schedule for doctors and ask that his salary be raised from four thousand five hundred dollars a year to six thousand dollars per year? Why does a proposed law refuse to assume any responsibility for a malpractice suit brought against a hospital or a doctor? Why is a doctor sue dfor malpractice and often mulcted in heavy damages? A lawyer or any other professional man is never sued and never obliged to pay a cent of damages.

The answer—because we are considered the easiest class on earth on which to impose, and the value of the service we render the world the least appreciated. As an educated profession, we are indifferent as to the ultimate fate of ourselves. Organized medicine has not succeeded in preventing its exploitation and ultimate state medicine.

Does the organized profession want state medicine? If not, what means can we employ to battle for what are our just rights? An industrial accident law is a necessity and should include occupations as extrahazardous, but not so broad in scope as to include a single employee in a country store or a pump tender in a small town. What is the necessary scope of the state's regulation? It should go no further in restricting the occupation of the physician than necessary, for freedom of action is the goal of the law.

The state should see that labor in hazardous positions should not be imposed on and in turn deal fairly with those who administer to them. The physician and laborer have no difficulties. On the contrary, in my experience they are most fair, only asking for reasonable compensation for their services and in turn willing to give just compensation for medical and surgical services rendered to themselves and their families. I am sure organized labor would not indorse the state's regulation of doctors' fees an more than they would approve of such action for themselves.

It is the duty of the organized medical profession to protect the interests of its members. This does not mean that they must necessarily enter into politics, altho this will often be necessary, and it has become a necessity. We must make our influence felt. The state directory, the thirty-eighth edition, shows five hundred and sixty-eight doctors who have large numbers of close friends. Their influence at the time of election can be made most effective thru the State Medical Association, far greater than we as individuals realize. In order to play our proper part thru county, district and state organizations it is important to have this subject approached on a basis that will not seem purely selfish, but that will be for the good of the public in general, which, of course, means that it will be satisfactory to the medical profession.

A well organized committee on public welfare and legislation to be effective, must deal in a practical way with men and legislation. A chairman of the committee must be one who has demonstrated his efficiency by past service, and who can be induced to keep the position for some considerable period of time. His efficiency will depend upon the extent of his acquaintance, his knowledge of legislative procedure, and will naturally increase with each year's service. To handle administrative work a good secretary is necessary. Either the secretary or chairman, or both, should reside at the state capitol during the legislative session, where they can have frequently personal conferences. It seems to me that to make plans workable we must:

(1) See that the best possible are nominted, particularly for state offices.

(2) See that of the candidates nominated the best possible are supported for election.

(3) See that candidates before and after election are kept fully and accurately informed concerning matters pertaining to public health and the medical profession.

The procedure to make requests and protests effective concerning federal taxation is that state and county societies should adopt resolutions and file copies of them with the committees of ways and means of the House of Representatives and the committee on finance of the Senate. Copies of such resolutions should be sent to all senators and representatives from the state and from which the request or protest comes. Individual physicians should write to the senators and representatives, who represent them in congress, acquainting them with the views of the profession regarding the situation.

ORIGINAL CONTRIBUTIONS

PATHOLOGY, DIAGNOSIS AND TREATMENT OF GALL-STONES *

L. J. Austin, M.A., F.R.C.S. (Eng.) F.A.C.S.
KINGSTON, ONT.

I wish to present some observations on the pathology and diagnosis of gall-stones and their complications, and then to consider without too many technical details the surgical treatment necessary for the different types of cases.

PATHOLOGY

Gall-stones are met with in several well-defined types.

1. A dark gritty powder, which is often found in the ducts as well as the gall-bladder, and consisting of a calcium compound, with biliverdin. This material may form the nucleus of the more common types of gall-stones, and it is suggestive of the possibility of gall-stones forming in the ducts as well as in the gall-bladder itself.

2. A pure cholesterin stone, which is found most frequently at the neck of the gall-bladder, tending to become impacted at the opening of the cystic duct, or firmly wedged into that small, pouch-like projection sometimes called "the pouch of Hartmann," which is not infrequently found overlapping the entrance to the cystic duct. This type of stone is light in color, egg-shaped in outline, smooth on the surface, semi-crystalline in structure and sometimes almost translucent. It is practically invariably solitary and from its composition must be derived almost entirely from the secretion of the gall-bladder itself.

3. The common facetted multiple gall-stone, consisting of alternate layers of bile pigment and cholesterin. Altho this type is most frequently seen with well-marked facets, owing to the close contact of large numbers of stone, they sometimes appear as mulberry stones, covered with small tubercles and without any pressure facets.

4. The barrel stone. Altho this stone is made up of the same alternating layers as the previous ones, it forms a very characteristic type of its own. It attains to a very large size and the gall-bladder is tightly filled with two or perhaps three of these large stones, fitting accurately against each other, with flattened ends. This type has certain complications, afterwards to be described, which do not occur in the other types.

The next subject which we have to consider are the changes that occur in the gall-bladder, as the result of the presence of stones within its lumen.

Chronic cholecystitis. It must remain still somewhat of a mystery as to whether the chronic inflammatory changes in the gall-bladder are themselves the result of gall-stones or whether the gall-stones are formed as the result of an infection and cholecystitis that exists before the formation of the stone. Experimental attempts to solve this problem have given somewhat contradictory results but, putting it very shortly, most observers agree that the introduction of foreign bodies into a healthy gall-bladder does not determine the formation of stones unless some infected organisms are introduced at the same time as an exciting agent. It is always taught that a previous attack of typhoid fever frequently determines the onset of gall-stone formation, and that the nucleus of the stone thus formed contains live typhoid bacilli, sometimes for many years. I am certain that typhoid fever, however, is not nearly so important an etiologic factor as has been described. If we are to seek for an infection as the primary cause of formation of gall-stones, we are more likely to find it among the colon group which are ever ready to involve the bile duct, than thru the specialized organism of typhoid. When, however, we have studied the onset and pathology of our cases, we shall still be in a fog of doubt as to the true causative agents in any particular case.

Whatever may be said about the relationship of infection and the formation of gall-stones, there are certain well-recognized changes that result from the long-continued presence of the stones in the gall-bladder:

1. The first of these is fibrous thickening, leading to an exaggeration in the wall of the gall-bladder and the tendency for the wall to contract down and lose its muscular power, and tightly enclose the stones in a fibrous bar.

2. Acute suppurative cholecystitis. This is a very serious complication, due to infection with the pus organisms or the bacillus coli communis, within a gall-bladder containing stones which have already produced the fibrosis and subsequent pouching found in the chronic types. If the exit of the gall-bladder is filled up by an impacted stone or constricted by fibrous tissue, the pus cannot find its way out and, as the tension increases, there will be a tendency to dilate the gall-bladder, but if there has been long previous inflammation, with destruction and fibrosis, the gall-bladder cannot dilate and consequently perforation or gangrene must result, with all the subsequent dangers and complications

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* Read before the Third Annual Meeting of Pacific Northwest Medical Association, Vancouver, B. C., June 26-28, 1924.

of acute peritonitis. This perforation or gangrene which occurs in the gall-bladder is analogous to the changes that occur in a chronic appendix, which becomes acute, leading to perforation and gangrene and peritonitis, by the spread of the contents. The signs and symptoms of a perforated or gangrenous gall-bladder are very similar to those of a septic appendicitis except so far as they are modified by anatomic position.

3. Adhesions. By the spread of the inflammatory process thru the wall of the gall-bladder, the peritoneal coat may become involved and from this multiple adhesions frequently form to the neighboring structures, especially the omentum, the duodenum and the transverse colon. These adhesions are very common and responsible in many ways for the symptoms in case of gall-stones, and may further seriously complicate the operation.

4. Fistulae. In certain cases, especially where we have the barrel-shaped stones, the adhesions to the transverse colon and occasionally to the duodenum may become exceedingly dense and pressure may fall upon the walls of the intestine, until a fistulous opening communicates from the gall-bladder to the lumen of the gut. This in itself should not lead to any particular damage, but if a large barrel stone escapes thru the fistula, it may lodge in the intestine and give rise to gall-stone intestinal obstruction. This is, however, such a rare complication and so seldom seen, that I do not intend to discuss diagnosis or treatment of this condition.

5. Carcinoma. Carcinoma of the gall-bladder is relatively uncommon as compared with the large number of cases of gall-stones, and altho it is not yet proven, I think it is generally admitted that carcinoma is probably the result of the chronic irritation of the gall-stones acting upon the epithelium of the gall-bladder. If this is true, it is but another added argument for the removal of all gall-stones or the excision of gall-bladders containing stones.

The above changes and complications in the gall-bladder and its region are those associated with the multiple common type. In the more rare type of the pure cholesterin stone, there is not so much tendency to inflammation and subsequent thickening, but rather to a dilation and thinning of the wall of the gall-bladder, associated with an hydrops within its cavity. In fact, one may say that a distinct dilation of the gall-bladder, with clear fluid or with pus, is decidedly uncommon in the cases of multiple stones and is frequently the rule with the single stone impacted at the neck of the gall-bladder.

SYMPTOMS

I have been frequently asked by students: "What are the symptoms of gall-stones?" and in answer I have always insisted that they must be more precise as to the anatomic location of the gall-stones themselves, before it is possible to give a reasonable explanation of the very diverse symptoms that may arise. Symptoms of gall-stones in the gall-bladder are very different from the symptoms of the same gall-stones, when they are attempting or succeeding in making a passage down the ducts, and indeed the symptoms will be different according as whether the stone is attempting to pass down the cystic or the hepatic duct, and in considering the symptomatology, these anatomic decisions should always be carefully distinguished.

1. Symptoms of gall-stones in the gall-bladder. Unless there is the complication of acute inflammation, or the attempt on the part of the stones to escape down the ducts, the symptoms presented by stones quiet in the gall-bladder are often very scanty. Indeed, many cases are discovered at autopsy and occasionally at operation, in which the gall-bladder is found crammed with stones, and yet, as far as it is possible to discover, the patient has never had any prominent symptoms to suggest the presence of these stones. However, most cases of gall-stones present for us a history of flatulent dyspepsia, with discomfort or pain and a feeling of distention, most marked in the left hand side of the abdomen and coming on about half an hour after meals. This is associated with and caused by rapid formation of gas in the stomach, which has difficulty in passing on, owing to pyloric spasm, or the anatomic alterations due to adhesions. This discomfort seldom amounts to actual pain, is greatly relieved by the belching of wind, and is only occasionally severe enough to produce vomiting which, if it does occur, gives ready relief to the discomfort.

2. Simple gall-stones in the ducts. When a gall-stone starts to wander down the cystic and common bile-ducts, as long as the stone is not very small, a quite different picture is produced for the clinician. This movement, or attempted movement, of the stone is accompanied by the disastrous pain of biliary colic, with its often sudden onset, with great distress, vomiting and collapse. If the stone is passing or impacted in the cystic duct, this biliary colic will not be associated with any jaundice. If, on the other hand, the stone becomes impacted in the common bile-duct, there will be obstructed jaundice, following on the biliary colic, which will persist as long as the obstruction is maintaned. This

obstruction to the common duct most frequently occurs when a stone of moderate size becomes impacted in the ampule of Vater, and when lodged there not only gives rise to obstructive jaundice, but is often accompanied by chills and a rise of temperature to a moderate degree. In my own experience, the onset of these not very severe chills is often of very great diagnostic value in distinguishing the different types of obstructive jaundice, as it is much more commonly seen in gall-stone impaction than in the other types.

In the case of the single stone impacted in the cystic duct, or in the pouch of Hartmann, we may get another clinical picture still. This is the only condition in which the gall-bladder tends to become widely distended, without the danger of perforation, and when distended the muscular walls will contract to overcome the obstruction and will produce an attack of colic. In this case, therefore, we shall have biliary colic, without jaundice and with a rounded tumor, palpable in the gall-bladder region. It is seldom, as pointed out under the section of pathology, that a gall-bladder with multiple stones is sufficiently elastic and nonfibrous to give us a well marked rounded lump, and conversely, altho it is of course too dogmatic, it is almost an axiom of gall-bladder diagnosis that, if you find a case of gall-stone colic without jaundice and a perfectly definite tumor under the edge of the liver, it is safe to diagnose a single cholesterin stone obstructing the cystic duct.

When once the stones have begun to move, and in those cases where we have the most serious complications, the diagnosis is frequently much easier than in the quiescent period, and it is the cases of gall-stone in the gall-bladder, with persistent upper abdominal discomfort, that will give the most trouble in the diagnosis and cause more thought as to the treatment than the characteristic cases in which the diagnosis is easy and the treatment more or less obvious. In the more obscure cases we have to attempt to distinguish the symptoms of the gall-stones in the gall-bladder from those of chronic gastric ulcer, duodenal ulcer, various dyspepsias, due to nervous, atonic and prolapsed stomach, and from cecal stasis and chronic appendix.

In investigating a case, after a careful history, in which illnesses should be traced back even into childhood, we come to the physical examination of the patient and a very disappointing degree of information is obtained by abdominal examination. Tenderness in the epigastrium and under the right costal margin is so often present in upper abdominal lesions that the information obtained is very meager. Tenderness and pain felt under the right shoulder-blade, which is considered by some authorities as almost typical of gall-stone trouble, is in my opinion a most unreliable symptom.

What, then, can we call to our aid for the diagnosis of gall-stones?

1. X-ray examination. With increasing efficiency of technic, gall-stones are being more frequently demonstrated by the x-rays than even a few years ago, and some observers claim to get 70 per cent positive results. I cannot help thinking that this is a good deal above the experience of most of us, and while an x-ray plate should be taken to help establish the diagnosis, we must not be disappointed with a negative result, or permit it to unduly influence our diagnostic opinion or the treatment to be advised.

2. X-ray examination with barium and fluoroscopic observation should also be carried out and it may give additional information as to pyloric spasms and adhesions that may be valuable in determining a definite diagnosis.

3. X-ray examination taken after the abdominal cavity has been distended with gas will give a more precise indication of the position, shape and size of the gall-bladder than an ordinary picture. I have not myself had any experience with this method and frankly am a little frightened of it.

4. Ordinary test meals and the examination of stomach contents give us very contradictory and uncertain information.

5. The Lyon-Meltzer test, whereby the contents of the gall-bladder and ducts can be obtained for investigation by means of a duodenal tube, gives information as to whether there is an infection of the hepatic tracts, but does not tell us whether this is due to or associated with gall-stones.

TREATMENT

I think it is sufficiently well recognized that medical treatment of gall-stones offers but little hope. Surgical treatment is therefore, necessary in all such cases who present themselves with symptoms that are definitely acute or in whom the chronic discomfort and indigestion is making life intolerable. As I stated at the beginning, I do not intend to enter into the discussion as to whether the operation of cholecystectomy is to be preferred in all cases over that of cholecystostomy, but will only state that personally I do a cholecystectomy wherever possible, as there is less chance of a fistula and less chance of a recurrent formation of gall-stones and attacks of further colic.

THE SURGICAL TREATMENT OF PERFORATING ULCERS OF THE STOMACH AND DUODENUM*

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This paper is based on forty-four cases operated on for perforated ulcers of the stomach and duodenum at the Maria Hospital, Stockholm, Sweden, between the years 1908 and 1921, one case operated on at the University of Frankfurt a/Main, in March, 1923, on the surgical service of Professor Victor von Schmieden, and one case operated on at St. Vincent's Hospital, Billings, Mont., January, 1924. Thru the kindness of Prof. Einar Key, the Carolinian Institute at Stockholm, I was given an opportunity of going over the records of all the cases that had been operated on there and was able to reexamine twenty-four.

Today, in looking over the literature, one finds many different methods of treatment advocated, and in the literature, from the time the treatment of perforating ulcers became surgical, an even greater variety of methods have been recommended. This in itself, to a certain extent, is an indication that the treatment is not satisfactory.

When a surgeon has a case of perforating ulcer, he has a certain proposition presented to him and depending upon his surgical judgment and skill, the results will vary. The surgical condition of the patient will depend on two things: first, the physical condition previous to the operation, and, second, the severity of the peritonitis. If the patient is young, in good physical condition, and has had an ulcer for some time, so as to allow the abdomen to react by forming adhesions or developing a resistance, he will be able to combat a peritonitis of some duration. If the peritonitis is generalized, the young patient with a good constitution has a better prognosis than one, young or old, with a poor constitution. Time plays an important role. The greater the time elapsing between perforation and operation, the more marked is the peritonitis and the reaction on the system. The physical condition of the patient before operating, the severity of the peritonitis, and the time elapsing are the factors upon which the mortality of any series will depend.

To illustrate the above, a brief review of the cases which died will be given. Of the forty-six cases operated, twelve died. This gives a mortality of 26.08 per cent.

Case 1. Arteriosclerosis, edema pulmonis, localized peritonitis.

Cases 2, 3, 4. Myocarditis, general peritonitis.

Case 5. Alcholism, cirrhosis hepatis, chronic myocarditis.

Case 6. Abscess hepatis, pneumothorax sinistra, bronchitis chronic catarrhalis, localized peritonitis.

Case 7. Bronchitis purulenta, bronchopneumonia, localized peritonitis.

Case 8. Edema pulmonis, general peritonitis.

Case 9. Degeneratio cordis, edema pulmonis, tuberculosis renalis sinistra.

Case 10. Arteriosclerosis cordis, bronchopneumonia bilateralis, peritonitis diffuse purulenta.

Case 11. Myocarditis, peritonitis general.

Case 12. Myocarditis acute.

Case 9 was operated on three hours after the perforation and died fifteen days later from symptoms of cardiac failure. Nine of the cases which had a circulatory disturbance as a direct cause of death. One had a pulmonary complication, and another case, which was admitted in very poor physical condition, died as a result of a double bronchopneumonia in addition to a general peritonitis.

Regarding the time element there was no time mentioned in four cases. In two cases the operation took place ten hours after the perforation; in five cases, nine, eleven and a half, sixteen, eighteen, and twenty-four hours respectively; and in one case ten days after perforation. In the cases that died three or more days after operation, there was a tendency for the peritonitis to become localized.

So we find from these facts that the striking thing is, had the physical condition in these patients been good, the mortality would not have been so high.

TREATMENT

This brings us to the treatment. One of our foremost surgeons of today has often said, "If you operate on a patient, see that your operation does the patient some good, or at least if it doesn't help, see that it is harmless." That statement embodies a great philosophy. And so it seems that, instead of seeing how much we can do in order to make a perfect surgical job, this is one time the surgeon should see how little he can do and leave the patient with the best chance for recovery.

With this in mind a method has been used that was first advocated by Rissler, of the Maria Hospital in Stockholm, Sweden. He operated on the first case in this series in 1908. Since then, with some minor modifications advocated by Prof. Einar Key, all the cases have been operated on by the same method. Nine different surgeons have performed the operations. The cases have not been selected. All the cases that have come to the hospital have been operated on. The mortality has been 26.08 per cent.

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* Read before the Forty-sixth Annual Meeting of Montana State Medical Association, Helena, Mont., July 9-10, 1924.

Poissonier, in 1906, collected ten cases from the literature, in which the perforation had been treated by temporary gastrostomy. Attempt had been made to close off the perforated regions of the ulcer by tamponade and omental transplants. Jaboulay, in 1906, advised that a temporary gastrostomy be performed when impossible to make a good closure of the ulcer due to the location or friability of the ulcer edges. Lennander, in 1908, gave the indications for gastrostomy in the treatment of ulcers ventriculi, ulcers duodeni, and especially in perforating ulcers of the stomach or duodenum as (1) impossibility to close ulcer on account of location or condition of ulcer, (2) condition of small intestines, or any reason that might cause a paralysis of the small bowel, (3) stenosis at the pylorus when impossible to do a gastroenterostomy, and (4), where there may be multiple ulcers, to prevent death by secondary perforation.

The procedure has been modified so that, if it is possible, the ulcer is excised longitudinally and sewed up transversely; a Witzel fistula performed on the stomach; the contents in the abdomen wiped out with sponges moistened in warm saline; or if the peritonitis is generalized, the whole abdomen systematically irrigated with saline solution at 40° C. Then the abdomen is closed without any drains.

To go into detail over the different problems that present themselves, the perforating ulcer should be excised because the pathologic tissue can be removed; suturing is more easily accomplished; the amount of scar tissue is lessened; and healing is shortened. This brings up the question of obstruction which so many men say demands a gastroenterostomy. In this series there was no gastroenterostomy necessary on account of obstruction, because the gastrostomy, acting as a safety valve acts on a steam engine, allows the contents to run out as soon as there is any retention in the stomach. The obstruction is only partial and in three to seven days begins to function. Eliot did some experimental work on cats, excising from one-fourth to two-thirds of the duodenum. He found after six months, in the cases where two-thirds of the duodenum had been removed, that the stomach was not appreciably enlarged. Two of the cats vomited the day after operation, and one refused food for a week. The duodenum showed only a slight constriction and, where only a small amount was excised, there was no constriction at all.

The gastrostomy tube is attached to a long rubber tube and allowed to drain into a bottle hanging at the bed side. The patient is allowed to take water, Vichy water, and Vichy water and milk as soon as he is awake after the operation. The tube is left open and the intake by mouth and the output thru the tube are measured. As soon as there is evidence that the output is much less than the intake, the tube is clamped off for a short time. If the patient can take the liquid without any trouble, the tube is clamped off for a longer time until, usually in seven to ten days, the tube can be removed. There is no postoperative nausea or vomiting, for the stomach contents drain out. The stomach may be washed out if so desired. It has worked satisfactorily in this series of cases.

Of the forty-six cases, twelve died soon after operation and twenty-four have been traced. Two died after leaving the hospital. One case, operated on at the University of Frankfurt, a/Main, has not been seen. He was discharged from the hospital twenty-one days after his admission and the last time we heard from him he was well. Of the two cases that died after leaving the hospital, one was readmitted twenty days after his discharge and was operated on for multiple abscesses of the liver and died soon after. The second case was readmitted to the hospital two years after his dismissal. He was almost moribund and did not respond to stimulation. Postmortem showed the small bowel filled with blood and the cause a hemorrhage from a small ulcer of the posterior wall of the duodenum. His perforation had been on the anterior wall of the stomach near the lesser curvature and the postmortem examination showed the stomach was negative.

These cases that were reexamined showed:

No symptoms	11
Mild symptoms	3
Recurrence and medical treatment	6
Recurrence and operation	2

Twenty-one of the twenty-two cases have been able to carry on their work. Those who have had a recurrence and have had medical treatment have been relieved and are at work. One case was operated on about ten years after perforation. The perforation had been on the anterior surface of the stomach and near the lesser curvature. At operation for recurrent ulcer, the ulcer was on the lesser curvature near the middle. Resection of stomach and gastroenterostomy after Billroth II was done. The second case was operated on ten months later for a recurrent duodenal ulcer. The perforation had been a duodenal ulcer. On account of dense adhesions a resection was not performed, but a posterior gastroenterostomy.

In five of nine cases with mild symptoms, recurrence with medical treatment, and recurrence with operation, roentgen examinations were made, and recurrent ulcers found.

The important conclusions from these facts are that eleven cases are well with normal stomachs; of the remainder, three have only mild symptoms; six have had recurrence with medical treatment; and only two have had to be operated on. For after all there is no stomach like a normal one. Smithies examined 273 cases after gastroenterostomy and found 104 definitely dyspeptic. Altho they had improved after operation, twenty cases had had no improvement and fourteen appeared to have an aggravation of their dyspepsia; 20.9 per cent were complaint-free; 48.9 per cent were clinically comfortable, and in 87.9 per cent there was subjective benefit from the operation. In 6 per cent of the pyloric and 17 per cent of the postpyloric ulcers gross hemorrhages occurred after operation.

The method suggested is as simple as it can possibly be made, and puts the smallest amount of drain on the patient at a time when he can stand very little. Cases, when the physical condition is such that a radical operation can be performed without endangering the patient's chance of recovery, should have a resection performed, because this will give the best final result. The problem of partial obstruction, which so many writers advance for doing gastroenterostomy, is unnecessary as evidenced by this series of cases. This method carries out the philosophy expressed by one of our greatest surgeons in that it helps and is also as harmless as it can possibly be made.

Prevention of Sterility. Several points are emphasized by Donald Macomber, Boston (Journal A.M.A., Aug. 30, 1924). The first is that sterility is a real problem and a big one. Sterility is too important biologically and economically to be neglected. The effects and not the causes have been treated, and the causes will go on producing effects until they are removed. The real problem is not how to deal with sterility, but how to prevent it before it develops. Macomber points out a few of these effects and explains the causes that have produced them. When the causes are known it is as a rule fairly easy to avoid them. What is needed is more knowledge, and this knowledge must be spread by the specialist to the family physician and by him to the laity.

CHRONIC APPENDICITIS*

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The other day on my way West, as the train swept across your limitless grain fields, your vast prairies, and in and out among your wonderful mountains, those noble cathedral towers, "the gorgeous palaces," one could not but feel small, even puny. It seemed so futile that one should dream of teaching anything to men accustomed to living among such grandeur.

If it be true that men and people develop according to their surroundings, it is difficult for one from the East to span your western breadth of intellect or fathom your depth of thought. Indeed, it seemed so absurd that I was tempted to leave the train and wend my weary way back to the place whence I came. Then I remembered the warm and welcoming hospitality upon former occasions, and I decided to risk the venture once again.

From anything I may say in the course of this paper, I hope you will not forget that I am a firm believer in early operation in cases of acute appendicitis, when a diagnosis of such can conscientiously be made. Delay means disaster to the patient and difficult explanation upon the part of the surgeon.

The question of so-called chronic appendicitis is quite another matter and requires careful consideration. Is a fibrosed appedix the cause of the symptoms of which the patient complains? Can an appendix that is merely fibrosed cause symptoms? How many times has it occurred to each one of us that a so-called chronically inflamed appendix has been removed, and in a few months the patient is back complaining of all the old symptoms? Was the diagnosis in such a case justifiable? Was the operation justifiable?

Frankly I may tell you that hardly a day passes but some patient consults me who has undergone such an operation, and the complaint is that he is not only no better but that his condition has been aggravated thereby. Personally, I think that such a diagnosis and such a line of treatment cannot be justified, unless one can elicit *a definite history of a previous acute attack.*

In order more fully to appreciate this subject one must go back and study prehistoric man. In what one might term *the cellulose age,* when a man's only weapon against the wild animals was a wooden club, he was probably a herbivorous animal, living alone and existing upon fruit, herbs and roots because he probably had only the rudiments of teeth with which properly to masticate animal food. His cecum then resembled that of the herbivorous animal of today and was long in order that bacterial disintegration of the vegetable fiber might be carried on until it became of use to his internal economy in the form of absorbable nutriment.

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In *the stone age,* when animal life became more abundant, he developed the use of flint in the form of spear-points and arrow-heads for his own protection. Teeth began to develop in the jaw and for greater safety he became gregarious.

Later he came to *the metal age* and he learned to manufacture bronze, and the sling as a means of protection came into vogue. Then a famine came over the land, and his ordinary food became scarce. Hunger compelled him to eat some of the flesh of the animals slain for his own protection, cooking it in his bronze pots. He liked it and began then to use it as a common article of food. He had found that with quantities of animal flesh ready to hand he could not only satisfy his hunger, but his lust for the kill and his teeth developed; likewise the cecum shortened, as it was no longer required for the bacterial disintegration of vegetable fiber.

With what one might term *the gas age* came the manufacture of gunpowder, and with it a further development of the metals, using iron and lead as projectiles. This gave man a still easier method of securing food, and as he became more and more carnivorous his cecum shortened still further until now normally it is but a small pouch.

Someone here may say that these remarks are a continuation of the "gas age." If he does my mission is fulfilled, for it will mean that he will not blindly rush in to take out a so-called chronically inflamed appendix without thinking twice.

While "the advance of animal life thru the ages has been checquered, it has on the whole been an advance towards increasing fullness, freedom and fitness of life. The form of civilization is in some measure dependent on the primary occupations, whether hunting or fishing, farming or shepherding; the industries of later ages have a profound moulding effect on the individual." Our job as doctors is to cultivate a progress that will make for fitter folk in body and mind, with improved habits and functions, both at work and at play.

In order to arrive at a still better understanding of the discomfort of the right iliac fossa, let us for a moment briefly study the alimentary tract. The food upon entering the stomach, well-mixed let us hope with saliva, excites the secretion of pepsin and HCl, and there it is churned about to get it in a fit state to pass on, the stomach being largely only a mixing basin, absorbing but a little water and in some places a little alcohol.

After a couple of hours this well mixed material begins to enter the duodenum, where it excites the flow of secretion from the duodenal wall, and has added to it the bile and the pancreatic juice. From here it is hurried on to the jejunem and ileum, which are waiting anxiously to abstract the absorbable fluids and send them broadcast thru the body for purpose of nourishment.

The residue and left-overs then enter the large bowel and from it probably only the water is absorbed. Such things as cellulose and other material pass on as residue, not being utilized, for the cecum is short. It then comes to the sigmoid, where it lodges until practically all of the water has been extracted, and when the sigmoid becomes overloaded a small particle drops into the rectum, which, if the rectum has not been abused, as it has been in so many women, telegraphs the desire to defecate. If the proper facilities are provided at the proper time, the sigmoid then telescopes into the rectum and the daily bowel evacuation is accomplished. What is there in the daily life that gives greater satisfaction and a greater feeling of well-being than this daily evacuation. Sad indeed is the case of the man or woman to whom this is an effort!

Another thing to remember in connection with the right iliac fossa is that the cecum and appendix were not always situated there. In early fetal development you will recall that, before the transposition of the mesentery of the large bowel, the cecum belonged to the left side. As development proceeded it found its way over to the right under the costal margin; but remember, the mesentery carried with it to the right side its original nerve filaments. Before birth the liver in the fetus enlarges enormously and crowds the cecum down to and may be below the pelvic brim, where it remains attached as the liver recedes after birth.

When, therefore, we take into account the vicissitudes of the development of man, of the process of digestion, and the thorny path of the development of the cecum and appendix, it is not to be wondered at that their host is oftentimes made to suffer. Even if the cecum be long, falling well into the pelvis, a person may carry on successfully and with a modicum of good health. But let him have an acute illness or an accident which may jar the mesenteries, bringing about an alteration in the neuromuscular control, then his troubles begin, with complaints of never feeling well, and of a right-sided pain. Under such circumstances don't enter him on your lists as a neurastrenic, or as a case of chronic appendicitis, but begin an elaborate investigation, for in the early stages much can be done to help him by a dietary suited to his digestive ability, as well as by medicinal and psychologic means.

Of course one must remember that neurasthenia or apprehension may play an important role. Recently I operated upon a patient for ruptured gangrenous appendix, and within a week I was consulted by three of his friends, who gave an account of a well studied chain of symptoms similar to their friend, but the physical findings would not fit and they reluctantly returned home with some good advice.

These patients with real trouble in the right large bowel usually come complaining of pain, lassitude, loss of pep, drowsiness, more marked in the afternoon, loss of appetite, "indigestion," some nausea, and often symptoms of cystitis. If the symptom of nausea is analyzed, it will be found it has no relationship to the pain and is most troublesome in the early morning. These are the cases that have ileocecal regurgitation. Young women, in the know, often hesitate to mention this. The patient is easily upset nervously, and indeed has often been passed from one to another as a confirmed neurasthenic. Usually they complain of constipation. In some cases there is mucus in the stools and occasionally blood from an ulcerated area in the cecum. One case had such a severe hemorrhage that direct blood transfusion was required as a life-saving measure. This particular patient had passed thru many hands, both in Canada and the United States, returning home as a neurasthenic.

A careful physical examination will reveal some tenderness, and under the hand one can often almost grasp a large flabby tumor. I say almost, because just as one thinks he has it, suddenly it is gone. In addition to the tenderness there is frequently hyperesthesia, not only over the right iliac region but also over the lower left dorsal roots because of the fetal nerve relationships. This is so different from the gallbladder case and for the reason that the cecum was originally a left-sided organ, and yet many of these cases are still mistaken for a chronically inflamed gallbladder.

A barium meal may be given and the average roentgenologist will report nothing abnormal except delay in the cecum, with failure to empty on the part of the appendix. If he is on to his job, or if you follow the case thru the series yourself, you will be struck oftentimes with the size of the duodenum, and in a certain proportion with what appears to be a "duodenal drag." Watch not only for the cecal delay, but watch also for a cecal pocket that may persist for days, and watch also for the ribbon-like transverse colon. The retention in the appendix may mean anything or nothing, mostly nothing, and is by no means a reason for its removal. When this examination is completed and the bowels have been well cleared, then resort to a barium enema. If there is marked atony you will find the haustra ironed out, and the cecum appears as a large pear-shaped mass, usually well down in the pelvis, with what may suggest a filling defect in the ascending colon, due to a fan-shaped band to the outer side. Very frequently, when the enema has filled the cecum, you may be able to see the opaque material regurgitate thru the ileocecal valve. In one of these cases the regurgitation was so marked that in twenty minutes from the time of giving the enema we saw a well marked duodenal cap, and many times, when the enema has reached the duodenojejunal junction, we have desisted because of the profound nausea produced. This, I think, gives a clue to the early morning nausea that is a cause of distress in many of the cases, for, with the prone position and the lessening of the peristalsis during sleep, a gradual regurgitation takes place and reaches its maximum with nausea in the morning.

The "duodenal drag," or the distended duodenum, that sometimes is picked up during the x-ray investigation, is caused by the lengthening of the mesentery with an accompanying tortuosity and varicocity of the superior mesenteric vessels, and these in turn make pressure upon, and cause narrowing of the bowel lumen where they cross the duodenojejunal junction, which in my opinion is responsible for the frequently associated duodenal distention.

Before turning to treatment one must first of all eliminate the mental "kink" of the surgeon, lest that kink lead him to a diagnosis of chronic appendicitis.

For purposes of treatment we have classed these cases into four groups:

A. The cecum may be mobile without much atony but it produces a drag on the superior mesenteric vessels and thus crowds the duodenojejunal junction. One must bear in mind that, when the cecum is mobile and becomes atonic, it reverts to that of prehistoric man or to the type of the herbivorous animal. Therefore, meat must be eliminated from the diet. In order to change the bowel flora as quickly as possible from the flora of the carnivorous to that of the herbiverous animal, a yeast cake may be eaten night and morning. Flaxseed added to the diet ensures a daily bowel evacuation. Abdominal massage and physical drill helps, and when in the upright position these patients should wear a corset with an abdominal "lift." When one has not easy access to a good corset-maker, an ordinary abdominal belt with an oblong rubber bath sponge under it serves the purpose admirably. Under such circumstances the alteration from semi-invalidism to rude health is sometimes very striking. This method of treatment, I should say, is applicable to well over four-fifths of the patients seen.

B. Failing to get physical efficiency in this way, in the early mild cases where the cecum is still an abdominal organ, probably all that is required to bring about a cure is the removal of the appendix, the sharp division of the ileal link, combined with plication of the cecum, after dividing by sharp dissection a constricting fibrous band at the junction of the cecum and ascending colon over the outer leaf of the mesentery, as well as a sigmoid band fixing the sigmoid to the left broad ligament in the female, or the pelvic wall in the male.

C. When the cecum is a pelvic organ, resembling the herbivorous type, and is in a similar stage of atony with marked ileocecal regurgitation, the removal of the appendix with plication of the cecum and then a burying of the plicated margin into a slit three or four inches long in the posterior parietal peritoneum, leads to a cure. There was no mortality in the first hundred cases. There have been two deaths apparently from pulmonary embolus in the second hundred. Afterward the patients gained in weight from ten to thirty pounds, with increased efficiency and a loss of much of the neurasthenia. In fact, some practitioners have complained that such treatment of their patients has destroyed a weekly source of revenue.

D. In the advanced cases, where there is marked atony with third degree incompetency of the valve, and long continued ill-health, where the appendix has been removed and a subsequent series of adhesion-breaking, health-breaking, and heart-breaking operations have already been done, nothing short of a radical resection of the terminal ileum, cecum, and ascending colon, with an end-to-end anastomosis.

Some years ago we abandoned the side-to-side anastomosis because three cases returned for treatment that had developed pockets in the blind ends; but in adopting the end-to-end anastomosis we ran into occasional fecal fistulae and a higher mortality. In the autuman of 1920 we adopted a piece of rubber tubing as temporary connection at the site of the anastomosis, and since then we have had many cases, with but one death, and this was in no way attributable to the operation, nor have there been any fecal fistulae.

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RADIOGRAPHY OF THE PNEUMATIZED PARTS OF THE SKULL *

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It may seem somewhat presumptuous for a general practitioner to speak to you on such a subject. I have little if anything to offer more than may be obtained from text-books, especially the later ones, and from the current journals, but I have recently becomes so interested in this work that I want to induce more of you to give it the attention it deserves. After a good many years of practice it has been impressed upon me that we do not always exhaust every means at our disposal for the determination of an accurate and complete diagnosis of the conditions which come almost daily before us.

We are too prone to look for the so-called diagnostic symptoms and signs of disease and be satisfied with them, without taking the pains to corroborate and perhaps extend our findings by the application of additional tests. You know our ideas of psychology are, in final analysis, generally derived from what we find are our own personal mental habits and processes. So it will be plain to you that I must have derived a considerable part of this information from my own occasional lack of care in the making of a diagnosis as complete and well substantiated as it might have been.

Not having always within easy access a specialist in the practice of ophthalmology and otolaryngology, I have occasionally been called on by the exigencies of small-town practice, to attempt a diagnosis of some of the pathologic conditions affecting the nasal accessory sinuses and the mastoids. It has lately been shown to me, tho I have used radiology for several years in general practice, that I have been missing one of the most satisfactory methods of determining the condition of the pneumatized portions of the skull. This short paper is intended simply to call your attention to the value of radiologic examinations in the diagnosis of these pathologic conditions and as an aid in their treatment.

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We have found that, in some of the otherwise undiscovered sources of focal infection, a properly made and interpreted radiograph has at last found the point of origin of the infective material. Then with the assistance, perhaps, of a man skilled in the treatment of such disorders, the patient has often been relieved from his distressing and often potentially dangerous condition. Not infrequently, after having found no source of chronic absorption in the most common locations, such as tonsils, teeth or genitourinary tract, the trouble has been found to exist in the presence of a pathologic maxillary, frontal or sphenoidal sinus. Many times this condition exists without enough local symptoms to attract the attention of the patient.

After diagnosis has been made, the radiograph is often a great help in deciding on proper treatment, as well as assisting in the prognosis. For example, after the diagnosis of an empyema of the antrum a carefully made radiograph will indicate to the surgeon where best to open the sinus in order to remove the pus and keep it from again accumulating, and how satisfactory results may be anticipated in the case.

Before operating for the drainage of the maxillary sinus, there is no way of accurately determining the relationship of its floor to that of the inferior meatus, except by radiography. The probe, passed thru the natural or an artificial opening, is not a satisfactory method of ascertaining this relative level. It is evident that, in order to get a perfect result, the new opening into the antrum should be as near as possible to the bottom of the cavity. Even after operation on such a pus-filled antrum, the radiograph will continue to show the presence of thickened and diseased lining membrane.

In many of those cases, where the surgeon believes his work to have been successfully completed and there is no longer any purulent discharge, the negative will indicate the need for continued attention. If the artificial opening is allowed to close before the recovery of practically normal tone of the mucous lining, a repetition of the operation will often be required. Thickening of the lining is well shown on the radiograph after the removal of the contained fluid.

These remarks apply to any of the accessory sinuses; in fact, to any of the pneumatic spaces of the skull. Even in the matter of deflected septum nasi, which is of course easily determined by inspection, nothing will so impress upon the patient the necessity for correction as to see with his own eyes the shape of the septum as it appears on the radiographic film. He likes to know that the surgeon is not imposing on him, and to see for himself just what is needed for the correction of the deformity, and why its correction is called for.

In the routine examination of our patients, especially those without self-evident pathology, I believe I can no better show the value of radiographic examination of the accessory sinuses than to quote a case. One of my colleagues told me that he had formerly had a little trouble with one of his antra, but that spontaneous drainage had occurred, with no recurrence of symptoms. At the time of mention of the subject, he considered himself in his usual good health. A negative made of his sinuses, largely for comparative purposes, showed a completely opaque maxillary sinus. Operation on the sinus released a large amount of very foul-smelling pus, and tho the doctor did not suspect before that there was anything the matter with him, he assured me that a very few days after the proper treatment of the accumulation, he had and continues to have a lot more of what he calls "pep" than for a long time before. In fact, tho he is a young man, he almost at once became an enthusiast in the so-called sport of taking more or less long walks over the prairie, hunting for a little white ball, and when he finds it he immediately tries to knock it so far that he will have to take another long walk before coming up with it again. Then the whole process is repeated—most of you know this obsession. It seems to be endemic in many parts of this and other countries.

Ordinarily in the technical part of this work, one makes most of his negatives of the accessory sinuses in the posteroanterior position. It seems that the following is about the most generally satisfactory technic: Place the subject face down on the cassette, with nose and forehead in contact with it. The sagittal plane must be perpendicular to the film, and the tube carefully centered laterally. Double screens should be used, both to increase contrast, and so that if it should be required, several radiographs may be made without danger of overexposing the skin or scalp. In this, as in other radiography, if it is thought that several exposures may be needed, it is well to make the negatives thru a screen of one millimeter of aluminum. The central ray should enter at an angle of about 23° above a line drawn from the external meatus to the glabella, and should emerge at about the center of the nose. Use a small diaphragm. I use a diaphragm 7 inches long, with an opening of 2¾ inches. At a target-film distance of about 22 inches this will give an image of about

5 inches diameter, which will include all the sinuses. During the exposure the head of the subject must be kept perfectly quiet by the use of clamps or rubber kidney-compressor. Do not use too short a wave-length, as a contrast negative is desired. I use a four-inch gap and an exposure in the adult of average size, of 120 milliamp-seconds, with superspeed film. Be sure to mark the negative before it is removed from the table, as otherwise there is no way to tell right from left.

It must be remembered that skulls vary a good deal in proportions, and one will not always get just the correct position, tho the one I have described seems of the most general applicability. In order to get a negative easy to interpret, the shadow of the orbital plate of the frontal and lesser wing of the sphenoid should cross about the upper fifth of the orbit, and that of the petrous portion cover about the lower fourth. This clears the lower half or more of the maxillary sinus, and makes for easy interpretation. In an occasional subject with unusually extensive pneumatization, interpretation may be slightly obscure, but this does not often happen.

Lateral views of the maxillary sinus are seldom useful, tho laterals of the frontals will indicate their anteroposterior dimensions, if that is desired. In case of doubt of the condition of the sphenoidal sinus, a lateral radiograph of the part may be called for, and is easy to interpret, when added to the information derived from the posteroanterior view. In such cases it is necessary that the sagittal plane of the head be exactly parallel to the cassette. The central ray enters perpendicular to this plane, at a point one and one-half inches posterior to the external angular process of the frontal. This gives a correct lateral view of the sinus and of the pituitary fossa. A vertex-chin radiograph may be easily made, if it seems to be required.

I believe there is more often doubt as to the condition of the mastoid body after all other means of diagnosis have been exhausted, than in the other pneumatized parts of the skull. Then the radiologist is called on for examination and interpretation of his results. In order to have mastoid radiographs which can be readily interpreted, it is necessary that both mastoids should be shown, preferably on the same film, and in the same relative position and direction.

It is known that at least 85 per cent of mastoids are symmetrical, tho those of one individual vary greatly from those of another. Some have large and well-defined cells, while in others the spaces are very small, tho the same person seldom has much variation between the sides. Occasionally both sides may be diseased, when the radiologist must use the judgment which he has derived from previous experience, together with all obtainable signs and symptoms, in forming his opinion as to the presence or absence of pathology and its nature.

The normal mastoid of any type shows on the film a network of continuous lines of greater density than the surrounding bone. In general, the presence of disease is shown by exudate in the cells, by destruction of their walls or by sclerosis evidencing attempted or complete repair of former damage.

In acute inflammation of the lining of the mastoid cells, there is more or less cloudiness of the spaces, with the cell-walls still quite well seen. One must be sure that the cloudiness is not due to motion of the subject, or to swelling of the surrounding soft parts, such as may have been caused by furunculosis of the canal. The region of the antrum is usually more opaque than normal. The cloudiness may be due either to the presence of pus or to a considerably thickened lining. In the more severe cases the pneumatic type of mastoid will show a marked opacity over the entire mastoid area. The cell-walls may be entirely obliterated, with probably evidence of disappearance of lime-salts. This is more likely to be observed in the antrum or the knee, and the anterior wall of the lateral sinus often becomes less distinct.

Abscess of the mastoid is shown by evident destruction of the cell-walls, and may involve the entire mastoid, the abscess area being shown by considerably increased transparency as compared with the surrounding parts. Chronic mastoiditis is shown by a general sclerosis or increased density of the entire mastoid.

Technically, exposures intended to show the condition of the mastoids should be made about as follows: It is quite necessary that the head be absolutely fixed, in order to avoid all motion on the part of the subject. The exposure, as in all head radiography, should be made with a fine-focus tube. The external meatus of the desired side should be in contact with the cassette, with the pinna turned forward so to avoid its shadow covering that of the mastoid. The central ray should enter at a point, in adults, about one and three-fourths inches behind, and the same distance above the upper meatus, emerging at the lower one. This will necessitate a tube inclination of 15° in each direction. I use the same small diaphragm as in accessory sinus work. Tube-distance should be about twenty inches.

Same screens, film and gap as in sinus views will require about 100 milliamp-seconds in the adult. One must be on the lookout for those who have plainly much thicker or thinner skulls than the average, if one wants to have satisfactory results and good readable negatives.

In examination of the mastoids, we are able in many instances to assist in prognosis as well as in diagnosis, remembering that a mastoid with large cellular spaces will often take care of itself when acutely inflamed, while one less pneumatized will fail to drain, and will require operation to assist the reparative efforts of nature. Repeated radiographic examinations will often indicate to the surgeon the advance or recession of the pathologic process.

At the last annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, held at Washington in October of last year, Dr. Leon E. White, of Boston, read a paper in which he announced the results of certain interesting studies of the optic foramina. In this paper he declared his opinion that there is a fairly definite relationship between the capacity of the optic foramina and the prognosis, in cases of acute involvement of the optic nerve. According to his investigations, treatment and prognosis of patients having acute involvements of the optic nerve are considerably dependent upon the shape and dimensions of the canal. This theory is important if true, and if the determination of the capacity of the canal is practicable. If further investigations by ophalmologists in connection with radiologists tend to prove White's opinion correct, it will be a great aid to the surgeon. It is evident that, where there is swelling of a soft structure which nearly fills a bony canal, the larger the canal in all its diameters, the less likelihood there is of constricting pressure to the point of permanent damage of the contained structure.

In this connection the radiologist is called upon to make negatives, on which the foramina may be measured and their form observed. Dr. White's results seem to show that in normal individuals the foramina average about 5.35 mm. diameter, with only about 10 per cent of them oval or irregular in outline. In the cases with acute optic nerve involvement, the average diameter in 25 cases was 4.68 mm., with 50 per cent oval.

In his summing up, White arrived at the conclusion that in cases of acute involvement there is much less danger of permanent damage in those individuals having the larger foramina, and in those with circular ones. If it can be demonstrated that one can be fairly certain that measurement and observation of the shape of the foramina are correct, his conclusions as to facts would appear in accord with theory.

I have done a little experimental work on this subject, mostly with dried skulls, with the idea of ascertaining whether one can rely on the measurements and shapes discovered. The directions given in his paper, for focusing and exposing, direct that the malar bone and nose be placed in contact with the cassette and that the entering ray pass thru the opposite parietal eminence and be directed toward the lower outer quadrant of the lower orbit. The parietal eminence is rather an indefinite point, and it appears that skulls differ so much in formation that a point obtained as correct for one skull, for the entering ray, may not give the same result when applied to another. The canal is about one-fourth to three-eighths inches long, and varies slightly in direction in different skulls. If the direction of the central ray is varied much from the direction of the canal, a circular foramen may be shown on the film as oval, or one that is oval may have its long diameter either increased or sufficiently shortened to make it appear as a smaller but circular, or a more elongated outline.

When working with the dried skull, one may finally arrive at the correct point and angle for radiographing. But in this case one may obtain the proper point by looking directly thru the foramen or by the use of the fluoroscopic screen. It seems to me that in the living subject, with the variations if bony anatomy which are so considerable, in any given examination the correctness of the results would be problematical.

Dr. White allows some margin in his prognosis as to recovery, based upon the apparent size and shape of the opening. His final conclusion is to this effect: In a severe case of acute optic nerve involvement, if the dimension of the canal is less than 4 mm. in any diameter, there must be immediate ventilation of the posterior sinuses to prevent permanent atrophy, unless some other definite focus of infection can be found, while a 5 mm. canal would probably recover from almost any acute attack, either spontaneously or under local treatment. Then if some focus of infection is found, it should be removed to prevent recurrence.

From my experimental work, the most generally correct results seems to be obtained with this technic: Place the subject so that the malar bone, nose and forehead are in contact with the cassette. Locate the tube so that the central ray will enter at a point 6.5

cm. above and 4.5 cm posterior to the external meatus, emerging about the center of the lower outer quadrant of the orbit. This will generally give a correct radiograph in the dried skull, and then the measurements are easy. In the living, on account of secondary rays, slight diffusion and lack of contrast, very careful technic and interpretation are called for.

In concluding, I want to remind you that this paper is written from the standpoint of the general practitioner. It is not intended to invade the private grounds of the specialist in eye, ear, nose and throat surgery, nor those of the specialist in radiology. The population of this state is scattered, and most of the towns so small that the general practitioner is usually the man who must make the diagnosis and at least suggest the treatment of conditions which in the large cities would be referred immediately to a specialist. Consequently I see these things from such a standpoint, and have so considered them here.

MAXILLARY SINUS *

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I shall not attempt to discuss all that the heading, maxillary sinus, comprehends, but rather speak briefly of a few cases whose pathology are found in the antrum of Highmore, with symptoms in the more remote parts of the body, and finally therapy directed toward the antrum, relieving the condition.

A great amount of work has been done in the last decade on the pathology of the maxillary sinus. It has been proven repeatedly that the lymphatic system transmits infection from one antrum to the other. A foreign pigment can be injected in one sinus and within a varying length of time can be recovered from the other. This also holds true of the nasopharynx, the larynx and the upper air passages in general. The sinus is lined with a modified mucous membrane which also serves as a periosteum. Its opening is small when normal, and when slightly swollen of course impedes the emptying, and hence dams back the secretion, with infection and thickening as a sequence. It seems that the ostia of all the sinuses are not placed advantageously. They are all high or irregular, making it easy for a residue to form in the lower part. And of all these cells this feature is more marked in the antrum than any other, hence the great frequence of its involvement.

Infections in this locality are usually started by an ordinary cold in the head, the acute infectious diseases and the teeth. This condition is continued in the former case by the closure of the osteum to drainage by swelling and inflammation, in the later by an alveolar abscess or an ostitis of an upper molar or bicuspid.

Symptoms of this pathologic process may be local or general. If local, the patient's discription of his ailment directs our attention to the affected part. If general it is far more difficult to locate the trouble, and the necessary diagnostic search must be made to determine it. It is this latter symptom-complex of which I wish to speak. In order to bring out what I have in mind, I can best convey it by citing a few case histories and showing the roentgenograms of some of them.

Case 1. J. T. R., age 62, occupation farmer. First appeared for examination December 24, 1922, complaining of seeing double, occasional dizziness, specks before the eyes, a general weak feeling, and early fatigue for more than three years. The diplopia came on at irregular intervals but more often when tired from manual toil.

A general examination by Dr. C. H. Sprague revealed heart, lungs, kidney, etc., normal for a man at his age. An examination of the eyes showed a normal fundus and normal vision. About the only thing that could be found was an exophoria of about two degrees in the left eye and one degree in the right. He was presbyopic, but well corrected with a plus spherical lens. His teeth had been removed several years before. An examination of the nose showed redness and swelling thruout the mucous membrane and some enlargement of the right middle turbinate. A skiagraph showed the right antrum distinctly cloudy.

The nose was operated on March 5, 1923, and treated for several weeks following. He had considerable headache following some of the treatments but the diplopia has not occurred since. Dizziness has gone and he is again doing hard work.

Case 2, I. R., age 10. Came to my office March 5, 1923, complaining of deafness and some ringing in the right ear particularly. Her hearing was getting so bad that she was unable to catch ordinary conversation. This had gradually grown worse for more than one year. She had had the ordinary diseases of childhood, measles, mumps and chicken-pox, no complications following any of these. Had discharging ear when six months of age, but none since that time. Tonsils and adenoids had been removed two years before. An examination revealed retracted ear-drums, a nasal pharyngitis and the watch could be heard in contact with the ear only. X-ray showed both antra cloudy.

On March 13, the antra were opened, ventilated and drained. Granulations were cleaned out of the nasopharynx. She made an uneventful recovery, can now hear ordinary conversation without difficulty, and the watch at twenty inches. Her general health has gradually improved, she has gained in weight and feels fine in general. She is keeping up with her school work without difficulty.

Case 3, Miss L. L., age 27, single, stenographer. Came to me on August 24, 1922, complaining of inability to strike the proper note when singing, and a slight short attack of hoarseness at irregular inter-

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vals. Has been a singer of some local note for years. She had complained of this trouble for about eighteen months. She had no symptoms referrable to the nose and throat other than two attacks of tonsillitis. She had probably had a few more head colds during this period than she had before; however, she did not volunteer this information. Had influenza five years ago, ordinary diseases of childhood; otherwise had always been healthy. X-ray showed the left antrum distinctly cloudy.

Treatment of the antrum was advised, but this was refused because she could not believe her hoarseness was due to trouble in the nose from which she had never suffered. She continued with her work until March 5, 1923. During this interval the complaint had been somewhat exaggerated.

She was operated on and the antrum treated following this. She has improved and during the past several months the hoarseness has disappeared and she has felt perfectly well.

Case 4. A. L. B., age 14. Came to me complaining of "fainting sensations." These, in her mother's words, were characterized by, "palor, palpitation of the heart, giddiness, headache and specks before the eyes." A period of depression would follow. They came on at infrequent intervals for about one year. Sometimes she would be free of them for as long as four weeks; at other times they would occur once or twice daily, but always more apt to occur after physical or mental exertion. Previous to this time she had good health; in fact, she is above the average youth in both height and weight. She is also a grade ahead of pupils of the same age. Had the ordinary diseases of childhood, mumps and chicken-pox, when a baby, measles at four years. At one time about two years ago had a otitis media of the right side which lasted for about five weeks. While these symptoms were present, the tonsils and adenoids were removed but with no relief. She was put to bed for three weeks at one time and treated for toxic myocarditis. Again she did time in bed with toxic goiter. Fitted with glasses several times, all without relief.

She came to my office on January 4 of this year and after a careful examination nothing could be found other than a slight purulent discharge from the right nostril. Transillumination of the sinuses showed them to be clear. An x-ray examination showed both distinctly cloudy, thus proving that the light alone is unreliable in some cases.

The antra were opened and treated. The spells of which she complained have disappeared entirely. About the only thing of which she now complains is a slight postnasal discharge. She is not entirely well, but I feel it will not be long until her trouble will be entirely cleared up.

Case 5, Mr. O. D. C., age 36. Had asthma for six years. This has been periodic in type, coming on in fall and winter, but particularly following a cold in the head. When he had recovered from the cold the asthma would continue from three to five weeks. Had some nasal discharge but this he attributed to the cold only. An x-ray examination showed the right antrum cloudy. Needle puncture revealed thick foul smelling pus.

A radical operation was done. He has had but two slight attacks of asthma since. For more than a year he has been free from colds.

Case 6, B. T., age 9, female. Had when six months of age enlargement of the cervical glands, accompanied by high fever, drowsiness, vomiting, highly colored urine. The condition was diagnosed acute tonsillitis. Treated for same and in from one to two weeks the symptoms would disappear, the child would seem fairly normal again. The glands would recede, she would gain in weight and feel improved in general. This would be followed by another attack, occurring from two weeks to two months apart until the child was three years old, at which time the tonsils and adenoids were removed. Attacks of vomiting, cervical glands, etc., continued as before. Two years after the first tonsillectomy and adenoidectomy a second one was done, but with only temporary relief. Gradually the attacks became more frequent, and would now last for several days. About this time she developed a cough which would invariably accompany the attacks. It was irritating, productive at times and almost constant.

The child was now about eight years old, small, pale, behind with her grades from missing school at each sick spell, weighed but thirty-six pounds Came to me in August, 1923. An examination showed a swelling and some redness of the turbinals, a marked nasopharyngitis, some infected adenoid masses, some pieces of tonsils, and the uvula and soft palate partly gone. X-ray showed the right antrum decidedly cloudy, the left suspicious.

The antra were ventilated, drained and frequently treated subsequently. Two weeks after the operation she was able to reenter school and has now completed her grade. She has gained eight pounds in weight and feels well in general. Dr. F. M. Sprague saw this child in consultation when she had the last severe attack of vomiting. He felt sure that the gallbladder was infected. This was probably secondary to the frontal higher up.

I have cited a few cases from my records in an attempt to show that, by treating maxillary sinus infection, the symptoms so foreign to the local foci can be removed or at least lessened in severity, and the patient changed from a chronic sufferer to a person of good health.

In case 1 diplopia. We think of the eyes, and it is right that we should. If this individual had gone the full length and had eye drops and glasses enough for a whole community, he would have suffered with aches, pains, dizziness, double vision, and lastitude until the cause was removed.

In case 2 deafness in a child, with tonsils and adenoids removed and no otorrhea. Here we might be tempted to think of the deeper causes of impaired hearing rather than the nasal sinuses.

In case 3 periodic hoarseness happened to occur in a singer and the symptoms manifested themselves by an impairment of the voice only. This patient at first refused to have anything done to her nose. She felt sure she had nothing wrong by reason of the fact that she had no nasal symptoms at all.

In case 4 definite attacks of a modified syncope. One surely could not be blamed for thinking of the heart or the thyroid in a case like this. She had suffered over a long period of time, she was losing out in school, and was a constant cause for grave worry to her mother.

In case 5 asthma. Not all of these cases are improved by clearing up foci of infection in the antrum but if we look closely for the cause of the trouble sometimes we will be rewarded by a result such as this.

Case 6 to me is one of interest. This because of the frequency of such a complaint among children. The cervical glands caused the first attack and probably all others arose from infection in the sinuses. I reason this way because, following each attack, she was so long going on to recovery, and at no time did they ever entirely disappear. In acute tonsillitis this is usually not the case. The cough was caused no doubt by a direct spread of the inflammatory process to the larynx, accompanied by an involvement of the lymph glands about the trachea and bronchial tubes but not a definite bronchitis. The vomiting was probably caused by an infection of the upper digestive tract and could have been caused by the pus being swallowed constantly. The thought frequently comes to me are these, the kind of cases that have so much digestive disturbance in after life? Probably the sinuses clear or becomes subacute at puberty or thereabouts. A period of fair health ensues, until some special tax is put on existing conditions, at which time a flare up takes place in the abdomen.

Treatment of Nephritis and Edema with Calcium. Norman M. Keith, Charles W. Barrier and Mary Whelan, Rochester, Minn. (Journal A. M. A., Aug. 30, 1924), discuss results obtained in two cases in which the balance of certain of the inorganic ions was determined. These two patients presented marked general edema. Their condition had been diagnosed clinically as subacute glomerular nephritis and subacute nephritis, respectively. Both had ultimately a very satisfactory diuresis produced by calcium chlorid. At the end of the diuresis, both patients were much below their normal weights and both had normal renal function; the two-hour phenolsulphonephthalein output in one case was 80 per cent, and in the second case 75 per cent, but albumin casts were still present in the urine and the specific gravity was relatively high. After calcium ingestion, the only change noted in the inorganic cations of the blood serum was a moderate decrease of sodium in the second case. In neither cases did calcium chlorid alter the carbon dioxide combining power of the blood plasma, although the hydrogen-ion concentration of the urine dropped. There was an excess excretion of ammonium during the treatment with calcium chlorid. In both cases, during the control period, there were negative balances for calcium, chlorin and sodium. In neither case was there a proper proportion between the chlorin and the sodium ions, if calculated as sodium chlorid. The sodium was in excess, and was probably excreted as a salt of some other acid. When calcium chlorid is ingested, calcium is eliminated by the bowel, and chlorin by the kidney. In certain cases, sodium is discharged in large amounts and water is made available for elimination, and is excreted. The action of calcium and ammonium chlorid as diuretics, in cases of nephritis with edema, may be due in part to a change in the acid-base equilibrium of the body, causing the tissues to liberate water for excretion by the kidney.

ACIDOSIS *

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Acidosis is that state of being, in which there is an excess of H ions over OH ions in the body tissues.

ETIOLOGY

Pure water which is neutral to litmus has a hydrogen ion concentration of 1 x 10-7 or 0.0000001 grams of hydrogen to the liter of water. Blood has H ion concentration, varying from 0.35 x 10-7 to 0.49 x 10-7. Thus blood is normally slightly alkaline. This state of acidity exists primarily in the tissues, and occurs in the blood stream only a short time before death. It is brought about under the following conditions: Suboxidation, starvation, fevers, the various diarrheas, cyclic vomiting, intestinal infections, cancer and cachetic states, foods, anesthesia.

Under insufficient oxidation we have, first, diabetes mellitus. In this condition we have exemplified the old saying that fats burn in the fires of carbohydrates. On account of the patient not being able to utilize carbohydrates, the fats in the foods and body tissues are not fully oxidized and acids appear. Fat molecules contain a smaller amount of oxygen than do those of the carbohydrates; so if the process is not carried to completion, which normally is CO_2 and water, we have acetone appearing. When the process is less complete acetoacetic acid results. If the oxidation is still more incomplete, we have beta-hydrooxybutyric acid also. These are what are known as the ketone bodies and are acid in reaction. They appear most frequently in diabetes mellitus and are often found in the urine of children suffering from carbohydrate starvation.

Again, insufficient oxidation may be caused by cardiac disturbances, both in the diabetic and nondiabetic patient. Myocarditis, pericarditis and valvular lesions lessen the vigor of the blood flow and hence a diminution in the amount of oxygen carried to the tissues and a lessening of the carrying away of the acid products. Distention of the abdomen and lying on the left side both interfere with the action of the heart and contribute more or less towards the same results. Vascular conditions, such as arteriosclerosis, lessen the oxidizing processes thru the interference of the blood supply. Also the pressure of tumors on a part or on the vessels leading to an organ cause the same interference.

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Regarding the blood conditions, the cause may be a lessening of the oxygen-carrying element, namely, hemoglobin. Thus in hemorrhage and in anemia we have a lessened hemoglobin content. Carbon monoxide when breathed forms a stable compound with hemoglobin and renders a certain amount useless for carrying oxygen.

Interference with the proper aeration of the blood thru consolidation of the lung tissue in pneumonia, or a lessening of the chest expansion because of pleuritic pains, or a compression of the lung by hydro-, pyo- or pneumothorax all tend to lessen the aeration of the blood. An aneurism pressing on the trachea or edema of the glottis will cause an interference with the air intake and lessen aeration. Devitalized air has a similar effect.

During exercise a large amount of acid wastes are formed in the body, hence an athlete's urine is always strongly acid following exercise. More acid is formed in the standing position than in the sitting, while still less is formed in the reclining position.

In all fevers we have an increased nitrogen metabolism and hence increased acid production. This is especially true of influenza and pneumonia. Cancer, starvation and cachetic conditions all tend toward excessive acid production thru destruction of body proteins, weakened oxidizing and eliminative processes and lack of carbohydrate utilization.

Dehydration thru diarrhea, cholera infantum, etc., depletes the body of alkaline salts, and lessens the secretions of both urinary and sweat glands, as well as the tissue fluids for the dilution and transportation of acid wastes. Cyclic vomiting produces a similar effect thru dehydration and fasting.

Acid-forming foods, when taken in excess or without the necessary alkali-forming foods in the diet, disturb the alkali balance of the body. Intestinal infections, such as appendicitis and ileocolitis, send toxins to the liver and hinder the activities of the liver cells in the protein oxidations and the production of alkaline bile salts.

Anesthesia produces acidosis thru various causes, among which may be mentioned decreased oxidation during its administration, injury to the liver cells, more or less starvation following operations and sometimes foolishly preceding. The shock produces a lowered blood pressure, diminishing oxidation and elimination.

PATHOLOGY

In general it might be said that the pathologic changes in the body are not unlike those produced by the toxins of any poison. Protein tissue is composed of colloids. One of the properties of colloids is that when they are placed in an acid medium they swell, the collodial particles being pushed farther apart presumably by the increased activity of the electrolytes. As the acidity rises, or as this condition continues, these colloids go into solution. If this occurs in the kidneys, we find albumin in the urine. As the acid condition continues, the cement substance between the cells dissolves and the cells are loosened, hence the prostration and weakness of the whole body and the appearance of casts in the urine. It might be added that the casts become granular and then hyalin as the acidity of the urine rises.

These cloudy swellings around the capillaries further interfere with the circulation and a vicious cycle is set up with resulting edema. Examples of this are edema of the eyeball—gloucoma; of the kidney—the large white kidney; of the liver—jaundice and lessening of the bile salts and ammonia in the urine; of the spleen—disturbed hematopoetic action; of the vomiting center of the medulla—nausea and resulting vomiting. If the brain as a whole is involved, we have the so-called uremia. That this is not uremia is proven by the fact that animals with both kidneys removed do not die in coma.

In the blood we have amphoteric salts which maintain neutrality within certain limits. The monobasic salts of sodium, calcium and potassium are only very slightly acid and require considerable alkali to render them alkaline to phenolphthalein, while the dibasic salts of the same metals are very slightly alkaline and require considerable acid to render them acid to litmus. Hence they are called "buffer salts." The monobasic and dibasic sodium, potassium and calcium phosphates, and the monobasic and dibasic sodium, potassium and calcium carbonates are the chief buffer salts. When an acid is added to the blood it replaces one of the metal basic ions from a dibasic salt and changes it to a monobasic salt. The opposite is true when an alkali is added. Hence we have an alkali and an acid reserve which renders the blood capable of neutralizing acids and bases within certain limits. It is for this reason that we find more marked acid conditions in the tissues than in the blood stream. In fact the blood never becomes actually acid except shortly before death.

The ultimate end products in oxidation are carbondioxide and water. As has already been stated, if fats are not fully oxidized, acetone and diacetic acid result. These are thrown into the blood stream and unite with the alkali salts. Suboxidation acids of the carbohydrates are lactic and sarcolactic acids and these further reduce the alkali reserve. Of the proteins we have phosphoric and sulphuric acids, resulting from insufficient oxidation. But even tho the oxidation is carried on to completeness, the carbon dioxide formed in the tissues must be carried away and in so doing it unites with the sodium carbonate thus: $Na_2CO_3+CO_2+HOH=2NaHCO_3$, or with sodium hydroxide: $NaOH+CO_2=NaHCO_3$. A small amount is dissolved in the blood plasma forming carbonic acid: $CO_2+HOH=H_2CO_3$. The carbonic acid is acid while the sodium bicarbonate is alkali. Normally the ration betwen the two is one to twenty. Carbonic acid is not so easily dissociated as sodium bicarbonate and, as the alkali reserve is diminished, the ratio becomes more than one to twenty and the removal of the CO_2 is interfered with and the pH of the blood increases. The alkali salts of the proteins and the reduced hemoglobin of the venous blood also aid in maintaining neutrality.

SIGNS AND SYMPTOMS

The hydrogen ion acts like any other toxin in producing destruction of the tissues when present in excessive amounts. But like any other toxin it first causes an irritation of the tissues. A little later we have lassitude and fatigue. The action of the liver is interfered with and, the ammonia not being converted into urea, the urine is strong and smells of ammonia. In the case of children hard, white stools appear. The tissues as a whole become soggy, and the skin dry and inelastic thru the lessened activity of the sweat glands, and the temperature rises. The pulse also increases; nausea and vomiting are frequent thru involvement of the vomiting center. Later the intoxication becomes more marked and hypernea or air-hunger, prostration, somnolence and coma supervene.

DIAGNOSIS

A condition of acid intoxication may sometimes present the picture of pneumonia, but an examination of the lungs readily confirms the latter. The prostration of influenza, the air-hunger of hemorrhage, the nausea and vomiting of appendicitis and other intestinal disorders all may be simulated by acidosis. In fact these conditions are usually accompanied by an increased acidity and the symptoms thus augmented.

A simple therapeutic test will reveal the presence of an acidosis. Seventy to 150 grains of sodium bicarbonate by mouth will turn the urine of a normal person alkaline in two hours. In acidosis it may take ten or twenty times this amount. In children under three years of age 30 to 40 grains will turn the urine alkaline and remain so for about ten hours. Among the laboratory tests for acidosis may be mentioned the CO_2 combining power of the blood. This measures the amount of available alkali in a sample of blood which will unite with CO_2. Decreased affinity of hemoglobin for oxygen, and the measure of the pH concentration in the blood are valuable tests. Titration alkalinity of the blood measures the latent acidity or alkalinity. Measuring the CO_2 tension of the alveolar air is a test that measures the ratio of carbon dioxide actually being given off by the blood and is one that the average practitioner can use. Another is the retention of alkali by the tissues when the kidneys are functioning normally.

The urine as a rule is a very nearly correct mirror of the general acidosis of the body and its titration will rarely lead one astray. The error will be on the side of alkalinity, and the excessive increasing of body alkalinity will never reach a harmful state before the urine becomes alkaline. The titration of the urine is so simple that every practitioner should follow this as a routine in all cases where acidosis is suspected. Ten c.c. of normal urine can be rendered neutral by two or three c.c. of a one-tenth normal solution of sodium hydroxide. In acidosis it may require ten times this amount.

TREATMENT

It must be recalled that acidosis is a state which accompanies a great variety of clinical conditions. It may or may not produce the leading symptoms, usually not; in fact in the great majority of cases it produces no clinical symptoms at all. This does not justify its being ignored, for it works synergistically with the various intoxications, and not only delays crisis and convalescence, but augments the severity of the major afflictions and increases its pathologic ravages. I wish to add that I believe mild acidosis to be a condition which is too often let go unrecognized and untreated, or if so, is given insufficient consideration. In many cases it may be the last straw that swings the balance; or, if it be not accompanied by some other disease, it will in time prove its presence thru arteriosclerosis, Bright's disease, failing eyesight or decaying teeth.

The treatment depends upon the cause. If this be the lack of sufficient oxidation, it must be either increased or the materials to be oxidized be diminished in amount. Hence in diabetes mellitus fats should be withdrawn. Such carbohydrates as the patient can utilize should be thrice cooked to render them more easily assimilated by the tissues; proteins should be boiled with acid fruits to separate to a certain extent the amino-acids. The destroyed vitamines can be supplied thru raw fruits and low carbohydrate vegetables and raw eggs. The depleted alkali of the blood should be restored. If these measures do not produce prompt results, then insulin should be used.

If cardiac disturbances are the cause of suboxidation thru insufficient circulation of the oxygen-carrying medium, then the proper treatment should be instituted. If myocarditis is the cause, rest, digitalis and removal of all foci of infection should be employed. Valvular lesions and pericarditis require similar treatments. A distended abdomen interfering with the heart's action should be evacuated by strychnine, pituitrin or enema. The patient should never be permitted to lie on the left side, as that interferes with the free action of the heart. All cardiac cases should lie in the prone position.

Pulmonary conditions which interfere with the proper aeration of the blood, as consolidation of lung tissue in pneumonias, mucus in the bronchi, pressure of a tumor or aneurism against the trachea, compression of a lung by pyo- or hydrothorax, all lessen the aeration of the blood and should receive their proper treatments. For pleuritic pains give a narcotic or analgesic, so the chest expansion can be increased. The aeration can be somewhat increased by administering oxygen thru a funnel over the mouth, a catheter thru the nose, or injecting subcutaneously by connecting the needle directly by a rubber tube to the oxygen tank. The skin over the chest and abdomen can be inflated till it swells an inch or more. This can be repeated every two hours and a decrease in the cyanosis is noted after each treatment.

All fevers are accompanied by a greater or less acidosis and should receive as a part of the treatment both glucose and alkali. The same is true of starvation, marasmus, diarrheas and cyclic vomiting. Fluids, alkali and glucose should be given in sufficient quantities to successfully combat the acidosis, whether so-called clinical symptoms appear or not. The toxemia of diphtheria can be neutralized by antitoxin, but usually there is an accompanying acidosis which is too often left ignored. With a weakened heart muscle and other vital organs more or less injured, especially the liver and kidneys, the foundation for the development of acidosis is doubly well formed. The same is true in all cases of poisoning.

Pregnancy creates conditions most favorable for the development of acidosis. DeLee and others make little mention of this condition, but considering the increased burden on the heart, the distended abdomen, the increased call for oxygen, the extra wastes to be removed, there is every reason to suspect the insidious onset of acidity. Almost every symptom of eclampsia can be simulated by acidosis, and the author has prevented distressing symptoms in cases where the patient gave histories of eclampsia in previous pregnancies. In such cases one must pay special attention to the foods. Foods which give alkaline ash, such as fruits and vegetables, acetates and citrates, and foods containing high percentages of calcium, as milk, cheese, cabbage, carrots, oranges and almonds are supplemented by sweetmeats. Fats are withdrawn. It is not good therapy to urge a pregnant woman to drink much cream; it contains too much fat. Buttermilk is splendid to control bowel fermentation and thus relieve the liver of toxins.

In the treatment of acidosis in any clinical condition certain principles must be borne in mind, namely, replace deficient alkali and supply carbohydrate and alkali-forming foods. The urine must be rendered alkaline or nearly so and as much as four or five ounces of sodium bicarbonate must be given every twenty-four hours, if necessary. When the intestinal tract is upset as in nausea, vomiting and diarrhea, these must be introduced by other means; and there is no other means so convenient and effective as the intravenous route. During toxemia the activity of all body cells is at a low ebb, and the intestinal functions usually are markedly so. Therefore the introduction of foods serve largely to feed the bacteria and increase the toxemia. This further diminishes the activity of the liver and the secretion of the antiseptic bile and a vicious cycle is set up. Introducing fluids and glucose by the bowel often serves only to distress the patient and soil the bed, especially in children.

In intravenous therapy the amount of fluid that can be introduced is 1-60 of the body weight as a rule. Carbohydrates are introduced in the form of C.P. glucose in a 15 or 20 per cent solution, from 200 to 300 c.c. for adults two or three times a day, for children under five years, about one-third this amount. Sodium bicarbonate is used in a 4 per cent solution and in similar amounts. For replacing fluids 0.9 per cent sodium chloride or, what is better still, Locke's mixture may be given in volumes from 200 to 600 c.c. every two or three hours if necessary. It must always be borne in mind that the maintenance of body fluids is of supreme importance.

SPRAIN FRACTURE OF THE TUBERCLE OF THE TIBIA *

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The tubercle of the tibia, owing to its exposed position, is subject to either total or partial fracture. There are many types of the latter, of which the sprain fracture is a most interesting subject for investigation.

The name, Osgood Schlatter disease, has been given to this condition. There are many observers who hold the opinion that this is not a fracture in the ordinary sense, but that the disability is of inflammatory origin (Mosti[1]). Muller[2] says that it is a "systemic, pathologic condition, manifesting itself in a tendency to spontaneous separation of the epiphyses." Connell[3] thinks that it is purely a traumatic process, imperfect union of the tibial tubercle being a predisposing factor. Stevens[4] is of the opinion that this condition should be classed as an injury and not as a disease, stating in explanation that it is reasonable to suppose that repeated pulls of the quadriceps muscle exerted upon the tubercle before its ossification may cause its separation and be followed by an inflammation of a nonsuppurative nature. Later in life this continued trauma may result in a definite fracture, followed by periostitis. The cases which are herewith reported would tend to support this view, as there is in each a distinct history of repeated trauma and no evidence of disease of the other epiphysis.

Owing to the separate center of ossification, the tubercle of the tibia appears as a peninsula of bony tissue extending downward from the epiphysis. This consolidates with the diaphysis in late puberty, the ossification of the tibial tubercle beginning at this time.

The direct fibres of the tendon of the extensor group of muscles are attached to the anterior surface of this tongue-like process, so that a large part of the force exerted by this most powerful group of muscles is exerted on the tubercle at an age which is usually one of great physical activity, and when the tongue of bone is separated from the shaft of the tibia by a layer of cartilage, and the first strain of the pull comes directly on the tibial tubercle (Osgood[5]). In addition to the direct attachment of the fibers of the tendon, there is a fan-shaped prolongation of these fibres on each side which is attached to the lateral aspects of the upper anterior surface of the tibia on an oblique line. These anatomic facts explain the peculiar nature of the symptoms and the partial degree of disability.

This injury appears usually in adolescence, before the union of the tubercle with the shaft, as a rule under seventeen years. A small part of the anterior surface of the bone is pulled away and with it the attachment of the direct fibers of the patellar tendon. The disability when seen in adult life is usually the result of neglect in the care of the original injury which almost invariably was incurred during childhood.

Usually one or more small fragments are torn from the anterior surface of the tubercle, or the tendinous insertion alone may be detached. Following this there is more or less infiltration of the injured tissues and a slight increase in the fluid of the bursae.

DIAGNOSIS

The diagnosis should occasion no difficulty. The condition has been confused with pretibial bursitis, Brodie's abscess, periostitis, pinching of the infrapatellar fat, dislocation of the semilunar cartilage and fracture of the patella.

The patient, a child, complains of tenderness over the front of the knee. This tenderness is increased by pressure. There is pain which is aggravated by extension of the leg. The most characteristic clinical sign is "giving away of the forcibly extended knee," (Osgood[5], Makins[6], Winslow[7]). Extension is rarely completely limited, on account of the attachments of the lateral fibers into the diaphysis. There is partial or complete inability to support the weight of the body with the knee flexed, so that mounting an incline or climbing stairs often gives rise to complaint of pain and weakness in the knee. The disability is rarely suddenly acute, but is augmented as the days go by.

Upon local examination there is circumscribed tenderness over the tubercle and there is slight swelling due to the infiltration and increase of the bursal fluid. There is no involvement of the joint, passive motion of which is painless. The tenderness is in the median line, so that there should be no confusion with disability due to sprain of the lateral ligaments or injury to the semilunar cartilages. The pain due to pinching of the infrapatellar fat is felt beneath the patella in the joint. Inflammation of the bursa may be differentiated by noting the prominences instead of hollows on both sides of the ligamentum patellae in

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* Read before the Pocatello Medical Society, Pocatello, Ida., Jan. 12, 1924.

semiflexion of the knee, pain and tenderness being referred to the outer aspect of the patellar tendon (Lovett[8]). Tuberculosis of the tubercle may develop in this region, but the progress of the disease, with bone destruction and the lesser degree of localization, should exclude this (Hodgson[9]).

The x-ray should afford corroborative evidence. There may be one or more small detached fragments of bone resting in the soft tissues anterior to the tubercle, or there may be only a depression in the anterior surface of the bone at the site of the former attachment of the ligament. Eban[10] reports an interesting case with the radiogram showing a marked outgrowth from the tuberosity of the tibia in a boy of thirteen. Hodgson[9] and others (Bader[11], Stevens[4], Lovett[12], Vailliet[13]) have called attention to the fact that complete dependence must not be placed upon the radiographic findings alone, as they may be misleading. The peculiar tongue-like process of bone may appear to be separated from the tibia on the sound side. It is always imperative that the radiogram of both knees should be compared. Vailliet has drawn attention to the diverse configuration of the anterior tibial tubercle in the adolescent and shows how one can draw erroneous conclusions from radiographs alone. He states that the radiograph will show clear spots beneath the cortex, rarified bony tissue, irregularity in ossification, and later thickening by bony deposits in the periosteum and calcification of bony tissue. The localized tenderness, pain on extension, giving away of the knee, slight thickening with the above x-ray findings should make the diagnosis evident.

TREATMENT

Eban[10] states that surgical opinion is against operation except in advanced cases and fixation of the epiphyseal beak to the tibia by bone grafts or pegging is rarely indicated. Sever[14] has, however, reported open reduction and suture with kangaroo tendon having a perfect result in three months. Soule[15] reports a case in which he fixed the tubercle to the diaphysis by means of a bone pin. The patient was up walking on crutches in two weeks and in six weeks the leg was normal. He says that the advantage of open treatment is mainly in the short time required for a cure.

It would seem that operative treatment should be reserved for those neglected cases in adults, where the injury is old and the bone firm. In the recent cases in children, where the tubercle or its fragments are very small and the epiphysis active, a more conservative method of treatment should be used. Osgood[5] states that the treatment should be directed towards lessening the pull of the patellar tendon and restricting motion. "The limb should be fixed in an extended position until the union is firm, usually four or five weeks. Immobilization of the fragments may be accomplished by tightly applied criss-cross strapping of adhesive plaster extending around two-thirds of the circumference of the leg, applied from about one inch below to about one inch above the lower border of the patella, renewed every ten days for a month and a flannel bandage worn for a few weeks afterwards." In this manner of applying the straps of adhesive, the pressure is brought directly down upon the detached fragments and at the same time tends to prevent the action of the extensor tendon. "On account of a coincident inflammation of the bursa above the tubercle and beneath the patellar tendon in the small percentage of cases in which these bursae communicate with the joint, thereby causing a definite synovitis, complete immobilization of the knee may be necessary" (Osgood[5]).

During treatment the patient should be impressed with the need of avoiding throwing the weight of the body on the flexed leg as, for instance, in climbing or descending stairs, or sudden effort as in kicking a football. Mobilization should be gradual in order to avoid increasing the trauma and infiltration of the injured area. During the period of rest the tone of the muscles should be preserved by daily massage.

PROGNOSIS

Sever[14] states that complete recovery is a rule, open operation is not necessary and a cure can be obtained quite as well by nonoperative means. Galstraum[17] states that the prognosis is good but the treatment takes from six weeks to six months according to the case. In Osgood's opinion the prognosis is good with proper treatment.

In conclusion, I wish to call attention to the splendid article by Dunlop[18] on the adolescent tibial tubercle, in which there can be found a very complete historical review of the entire subject.

REPORT OF CASES

Case 1. A boy, fourteen years old, had complained of pain and disability in the region of the right knee for six months. It was first noted while playing association football, and altho he had continued to play, the pain and discomfort had grown to such a degree that it was a great effort for him to get about. Upon examination a small, very tender swelling was found over the tibial tubercle and there was some limitation in the power of extension.

The ex-ray (fig.1) revealed a concavity on the anterior surface of the tibial tubercle and two small detached fragments of bone. The knee was strapped with a

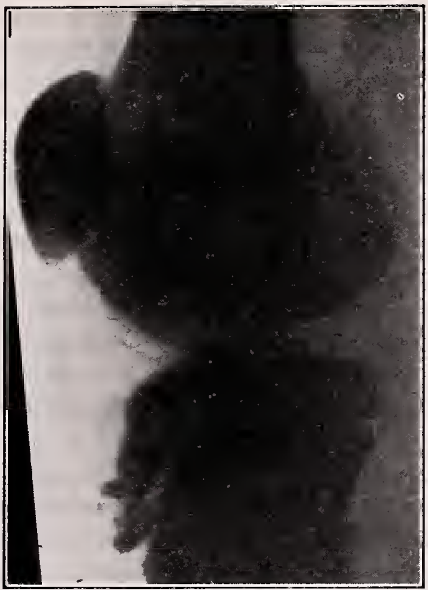

Fig. 1. Case 1. Sprain fracture of tibial tubercle.

basket strap of adhesive plaster and a light cast was applied and split. This was removed and again applied at the expiration of a week. The treatment was continued during three months at weekly intervals and was then discontinued. There was a complete absence of pain and disability and, altho the x-ray plate did not reveal bony union of the tubercle to the diaphysis, still the boy was able to function and extension of the leg could be carried out without pain.

Case 2. The second case was also in a boy, of sixteen years, the disability dating back three months. There was the characteristic swelling over the tubercle, tenderness upon pressure, and pain when the patellar tendon was forcibly contracted. This disability originated during a forcible kick while playing football. There was difficulty in climbing stairs and in maintaining the body weight with the leg flexed.

The x-ray (fig. 2) showed a partial separation of the tubercle almost similar to the first case. In this case there was also considerable tenderness over the tubercle of the opposite tibia, with a little swelling. There may have been some separation of the fibres of the tendon, but the x-ray did not reveal any fragments of bone (fig. 3). There seemed to be, however, some increase in the distance between the diaphysis and the projection of bone from the epiphysis. In this case both knees were strapped as in the former case and the strapping changed every few days over a period of five months. The final result was satisfactory.

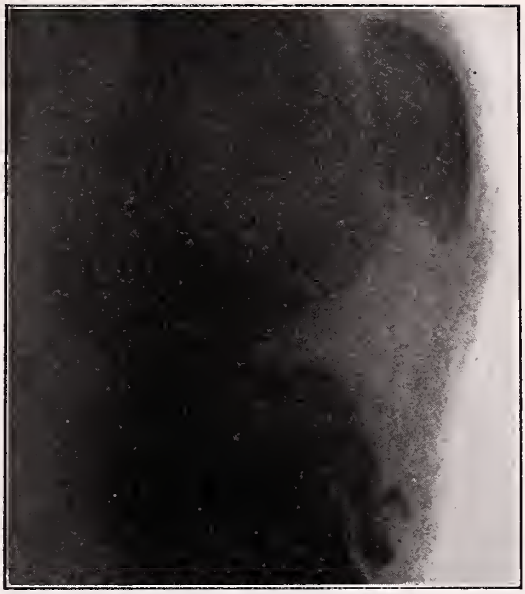

Fig. 2. Case 2. Right knee. Sprain fracture of anterior tibial tubercle, showing small fragments pulled away. Excavation at their former site.

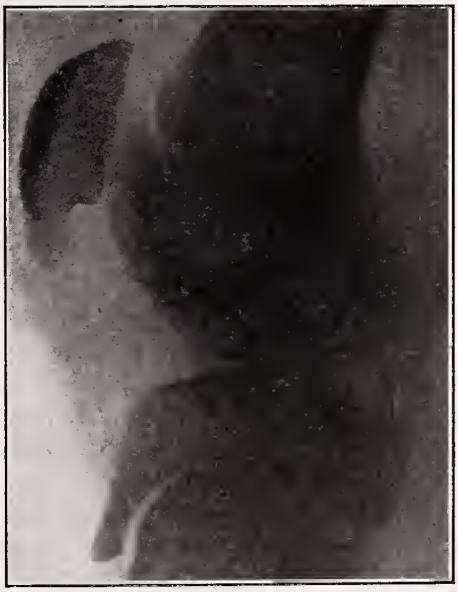

Fig. 3. Case 2. Left knee. No fracture shown, but apparent separation of epiphysis from tibia.

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FIBROMYOMATA OF THE UTERUS *

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We can realize the importance of the fibroid uterus when we study statistics and find it stated that one woman in every twenty-two is a sufferer from some form of this pathologic condition.

These tumors are composed of the same tissue as the uterine wall, and are usually encapsulated. A small number have irregular cavities, lined with epithelium similar to glands, which do not have a capsule and are designated adenomyomata. Names are given according to location. These tumors grow in the line of least resistance, yet 65 to 70 per cent are found surrounded with muscular tissue and are called intramural or interstitial fibroids. When forcing their way outward as development progresses, they approach the peritoneum and are termed subperitoneal, comprising 25 to 30 per cent of all cases. Occasionally one passes entirely beyond the grasp of the muscular fibres, being held by a small band of tissue and blood vessels, when they are called pedunculated, subperitoneal. In rare cases this variety may become attached to the surrounding structures by adhesions and in some way entirely separate from the uterus. Again the tumor may push inward as its size increases, lying beneath the endometrium and it is then termed a submucous fibroid, comprising about 10 to 15 per cent and generally may be recognized by the menorrhagia or metrorrhagia, even where one is unable to detect the tumor by palpation.

Diagnosis must be made chiefly by bimanual examination, as there are practically no objective symptoms that may be considered pathognomonic, with the possible exception of menorrhagia or metrorrhagia which occurs to a greater or less extent in about 50 per cent of the cases and as a rule in the interstitial and submucous varieties. Early in the case it may be merely an excessive flow at the menstrual period, becoming more profuse and more frequent as the tumor progresses, until in a large portion of the cases it becomes so excessive as to produce profound and alarming anemia. In some cases the growth may be so slow as to require ten, fifteen or even more years to attain the size of the common fist. On the other hand, it may reach an enormous size within a few months, apparently dependent on the quantity of the blood supply. Pain is usually absent until the tumor is large enough to produce pressure symptoms and when present is located in the lumbar or sacral regions of the back, low in the pelvis or down the thighs. Pressure symptoms vary according to the location of the tumor, as a relatively small fibroid low in the pelvis may cause great trouble or distress, while one of large size above the pelvic bones may be practically free from pain.

On examination we find the cardinal sign to be a mass much firmer than the surrounding tissue, at first spherical which later may be of irregular contour, not tender unless there is some complication such has inflammation or pressure on a nerve, and it always moves with the uterus, being intimately connected with it. Ovaries and tubes are free. There is no change of the area of dullness on change of position of the patient, unless ascites be present which is rare.

Going over the symptomotology of myomata one would think the diagnosis is a simple problem, but I wish to emphasize the fact that such is not the case. For example, given a married woman, aged thirty-five years, mother of three healthy children, youngest four years of age. For three years menstruation has been regular up to about four months ago, since which time no flow whatsoever. Some nausea at varying times of the day, some backache in lumbar sacral region. Had been examined by two physicians and pronounced pregnant. Examination revealed a uterus well out of the true pelvis, oval, smooth and of evenly rounded contour, extending to the umbilicus. Consistency was firm, not the boggy feel you would expect to find with a pregnant uterus. By this feature alone was made a diagnosis of fibroid, which was well portrayed and further verified by radiography.

In discussing the treatment I wish to state I am dealing with the uncomplicated cases of fibromyomata only. In scanning the history we find in the early period the operation of choice to have been enucleation and chiefly confined to the submucous pedunculated and submucous varieties. In an article by Johnathan Hutchinson, published in the *Medical Times and Gazette,* Aug. 1857, the statement is made that up to that date thirty-nine operations for fibroid tumors of the uterus had been performed. This included the continent of Europe, Great Britain and America. These were chiefly by Lisfranc and Velpau, of France, J. Y. Sympson, of England, and Atlee and Burnham, of the United States. Of 18 completed enucleations 12 recovered and 6 died. Of 15 enucleations, by producing gangrene, 9 recovered and 6 died, of 6 attempted but not completed 4 recovered and 2 died.

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* Read before the Fiftieth Annual Meeting of Oregon State Medical Society, Portland, Ore., May 27-29, 1924.

In the early 80's T. Gailard Thomas made a step forward by the use of a large spoon saw, grasping the tumor with a vulsellum, introducing the spoon and with a pendulum motion separating the tumor by sawing it loose. The mortality rate was about 50 per cent but only desperate cases were brought to operation. Contemporary with Thomas was Thomas Addis Emmet, who advocated his operation of traction and morcellation with the aid of curved scissors which he had devised and, as you know, he deserves the credit for the use of scissors in surgery. The technic was to gradually dilate the cervix over a period of several weeks with the aid of sponge tents, then by strong traction with the aid of a vulsellum or with a cord and slip knot bring the tumor down and remove it by morcellation.

Hysterectomy was discovered by accident and ignorance, as a midwife in delivering a placenta inverted the uterus and thinking it a tumor picked up a bread knife and cut it off from the vagina, thus performing the first hysterectomy of which we could find a record. Having observed the above case, Wrisberg in 1787 proposed the removal of a portion of the uterus for cancer but was not bold enough in the face of public opinion to undertake it, leaving the honor for Osiander who performed the first hysterectomy or amputation of the uterus by artificially producing a prolapse as a preliminary step to a successful operation in 1801.

In 1813 Langenbeck did the operation in a favorable case of complete prolapse and removed the entire uterus, excepting a small portion of the fundus with the attached peritoneum also, removing the appendages. Sauter, of Vienna, made an advanced step in 1822, when he did a total extirpation, as the operation was then called, of the uterus *in situ* without the use of ligatures and the patient made a complete recovery. The technic was as nearly the same used at the present time as was possible without speculum, pressure forceps or ligature.

As no one was bold enough to do extirpation of the uterus in the face of the severe criticism and condemnation of the operation, this closed the scene of action along this line until the days of Freund who did the operation by the abdominal route with invariably fatal results. A lull again took place until Schroder revived the high amputation and Czerny brought forward his operation of vaginal hysterectomy, placing it on a firm basis as a rational treatment for fibromyomata as well as malignant conditions.

For a number of years the vaginal was generally the operation of choice but within a few years the abdominal route appeared on the scene as a strong contender for surgical favor and for a time the discussion raged hot and furious. At this time the old question of when to operate on a fibroid tumor or how long "watchful waiting" should be the motto was a vexing problem. Hysterectomy by either method was considered radical and treatment with the galvanic current had its sponsors. The ligation of the uterine vessels, also Martin's operation of ligating the base of the broad ligaments and, if need be done, including one of the ovarian arteries, had many advocates, but now scarcely receive a passing word.

At the present time the treatment for fibromyomata recognized as worthy of credit is myomectomy or hysterectomy, yet not to be done in all cases, as every individual case is a law unto itself and must be considered from that point of view. It would not be advisable to submit a case to surgery that was suffering from grave organic disease, or of advanced age, or during pregnancy, or in women of the childbearing period unless in cases of emergency.

In our present stage of advancement with every instrumental convenience, anesthesia and asepsis, when major operations are attempted at every crossroad town or village, useless surgery must be condemned. Finally, myomectomy is the operation of choice in the childbearing period, if possible, in order to conserve the uterus. In advanced age, when a fibroid is increasing in size or prolonging the menopause, hysterectomy should be performed. As to the operative technic every surgeon has his own method and every textbook is full of descriptions.

The Case Against Gastro-Enterostomy. At the present time, in the opinion of Donald C. Balfour, Rochester, Minn. (Journal A.M.A., Aug. 23, 1924), there is no conclusive evidence that any operation is more useful than gastro-enterostomy in cases of chronic duodenal ulcer, except in carefully selected cases. Altho partial gastrectomy may be indicated in cases in which there is a persistent recurrence of the ulcer after gastro-enterostomy, since this recurrence is certainly not over 3 per cent, it would be difficult to justify partial gastrectomy in 100 cases of nonmalignant disease in order to prevent such a small recurrence, particularly when such recurrence can be satisfactorily dealt with by secondary operation. Gastro-enterostomy is not destructive.

THE FRAMINGHAM HEALTH AND TUBERCULOSIS DEMONSTRATION. COMMUNITY PREVENTION, CONTROL AND TREATMENT OF DISEASE, AS CARRIED OUT AT FRAMINGHAM, MASS., U. S. A.*

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One of the first essentials of community prevention, control and treatment of disease is that of education. The official health agency, receiving its money by budget, is usually restricted in its expenditure, and either unable or unwilling to expend money in experiments or demonstrations. It is, therefore, the duty of nonofficial or volunteer health organizations to demonstrate the value of our present knowledge regarding disease prevention, control and treatment. Practically all units of community schemes for disease prevention, control and treatment now utilized in America, such as sanatoria, open-air schools, preventoria, the public health nurse, etc., were shown to be of value by nonofficial organizations before public officials were willing to accept them and expend funds for their maintenance.

The Community Health and Tuberculosis Demonstration at Framingham, Mass., is an example of what can be accomplished by demonstration by a nonofficial organization. It was established on January 1, 1917, by the National Tuberculosis Association with the financial assistance of the Metropolitan Life Insurance Company, to show that by the expenditure of a sufficient amount of funds it was possible to diminish both morbidity and mortality from tuberculosis in a community with an average equipment for health work.

The Metropolitan Life Insurance Company is interested in tuberculosis because 16 per cent of the deaths in the industrial department are due to this disease. In 1915, the company paid $4,000,000 on account of 14,325 policy-holders dying from tuberculosis. Tuberculosis is responsible for approximately one in every ten deaths in America, and one in every three industrial deaths is due to this disease. The National Tuberculosis Association alone, and thru its associated state and local organizations, is expending upwards of $5,000,000 annually in its efforts to prevent, control and eliminate tuberculosis, and it is quite natural to ask, "Of what value are present-day methods of disease prevention and control, and is this enormous expenditure of effort and money worth while?" The story of Framingham answers the question.

THE SCOPE OF THE WORK ATTEMPTED

Framingham was selected for the demonstration because it represented a typical American community of about 17,000 people, with an average death-rate, average population and average conditions, socially and industrially. Moreover, the local officials, voluntary health and civic organizations, expressed a desire for the demonstration, and assured cooperation. The object of the demonstration was essentially to discover all cases of tuberculosis in the community, to determine the economic and social factors in disease causation with special reference to tuberculosis, to apply the best-known methods of treatment, to develop a comprehensive program of prevention, and organize the community for disease prevention and health creation.

One of the first things undertaken at Framingham was to secure the cooperation of local physicians and towns-people. The former was accomplished by organizing a medical club, before which important lectures and clinics were given, concerning various phases of the tuberculosis problem and related medical problems. This also developed certain standards for tuberculosis diagnosis, and elevated the methods of diagnosis and treatment of this disease. Besides, it secured the support and cooperation of local physicians almost to a man. The cooperation of the people of Framingham was secured by acquainting them with the motives, methods and practical objects of the demonstration by means of special literature, daily press articles, numerous meetings and the appointment of local representatives on the National Committee and the organization of many local committees, representing various community interests, such as a local executive committee, a local advisory committee, an exclusive committee (whose duty it was to detect an invasion of the community by migratory consumptives), an industrial health committee, and infant welfare committee, neighborhood committees, etc.

The work began quite naturally with a series of investigations with reference to the incidence of tuberculosis infection and presence of the disease, the hygienic hazards, community resources, etc. Among the more important investigative activities may be mentioned:

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*Read before the First International Health Conference held at the British Empire Exhibition, Wembley, England, May 21-24, 1924.

1. A general sanitary survey, including a survey of industrial hazards, school and factory conditions, including problems of general sanitation, cleanliness facilities, illumination, ventilation, heating, dust, fumes, safety devices, milk and food control, morbidity and mortality statistics.

2. Not only was the community's statistical background studied, but the people themselves were studied by a sickness survey, designed to give a cross-section picture of the amount of disease of all kinds in the community and serve as a measure for comparing illness findings at the beginning with similar findings at the end of the demonstration. This census was similar to the sickness canvasses and health censuses frequently conducted by life insurance companies, and was carried out by the trained agents of several large insurance companies, loaned for the purpose, assisted by trained nurses. This survey disclosed 1.8 per cent incapacitating illnesses, 6.2 per cent for all forms of illness, and only 0.24 per cent tuberculosis (a point which shall be discussed later); 81.1 per cent of the individuals recorded ill were receiving medical attention.

3. A number of medical examination campaigns were held. Not only industrial workers, but 14,000 of the 17,000 people living in Framingham were given a thoro medical examination. This revealed an active tuberculosis present in 1 per cent of the population, with a prevalence of illness and disability of all kinds of 77 per cent.

4. A study of infant and child life in Framingham was made by visiting every home where a birth had taken place during the previous year, and recording certain essential prenatal, obstetric and postnatal facts. A tuberculin survey was made by an expert on 460 children, ranging from 1 to 7 years of age. This was done to throw light, if possible, on the sources of childhood infection, and to select those most needing special care. It was also done to determine the reaction percentages of different nationalities, neighborhoods, etc., as well as to determine the reliability of the tuberculin test in young age-groups as an index of tuberculous disease. This study revealed 33 per cent positive reactions, which differed significantly in different race stocks. Of special interest are the findings in Irish and Italian race stocks. While the Italian stock gave the highest positive reaction, very few cases of active tuberculosis were found among them either in adults or children. On the other hand, while the percentage of positive reactions among the Irish stock was low in Framingham, as elsewhere, the Irish stock contributes more than its share to the morbidity and mortality rates. Reexamination if these children at subsequent dates disclosed no cases of demonstrable tuberculosis.

5. A careful investigation was made of the influenza sequelae which revealed many interesting things, among which was the relative degree of protection in the tuberculosis group, of which only 4 per cent became afflicted with influenza, while 12 per cent of the population at large was estimated to have had the disease. It is also interesting to note, in connection with the incidence of influenza in race stocks, that while the tuberculosis incidence among the Irish was eight times that of the Italians, the Italians had an influenza incidence four times greater than the Irish.

6. A census was made of all individuals in Framingham, covering such environmental factors as hygienic, housing, economic status, etc.

7. A survey was made of tuberculosis infection among cattle supplying milk to Framingham.

COMMUNITY DIAGNOSIS AND COMMUNITY TREATMENT

As a result of the foregoing activities a "community diagnosis" was made. This was followed by a "community treatment," the basic principle of which was to continuously encourage the community to meet its own health requirements and place the nonexperimental phases of the demonstration on a permanent basis. The community treatment comprised a number of activities, the most valuable of which was an expert consultation service, offering consultations to local physicians, factory medical and nursing staffs on cases of suspected tuberculosis or respiratory infections. This resulted in earlier diagnosis of tuberculosis, tripled reporting of tuberculosis, and tremendously increased the number of tuberculosis cases disclosed. It also encouraged the search for early tuberculosis and examination of contacts. This latter procedure resulted in the establishment of summer camps for pretuberculous children, as well as the establishment of domestic economy and food hygiene education for families having tuberculosis or under-par children.

The community was thoroly organized, not only for the control of tuberculosis, but for general health and disease prevention. This included general community sanitation, the promotion of infant welfare work, school health work, industrial health work, tuberculosis nursing, and a program of education, which included lectures to mothers, and to industrial groups and health cinema programs. These activities popularized health knowledge in the community and improved municipal methods of disease prevention, especially tuberculosis.

The tuberculosis clinic was reorganized. Tuberculosis cases were placed under supervision as rapidly as they were discovered. Those requiring institutional care were sent to suitable sanatoria or hospitals, others were cared for in the dispensary or home. The local board of health, the school committee, the Park Commission, the Framingham Hospital, the Civic League, and Red Cross were either developed or expanded, and aided directly or indirectly along financial and other lines.

THE CHANGES WHICH HAVE TAKEN PLACE

The foregoing is thus a brief sketch of the demonstration's purpose, its organization and activities. The changes which have taken place in Framingham may be summarized as follows: The demonstration is now in its last year, but has been so successful and convincing that the community has taken over all prenatal infant and preschool work, all the school health work, the general health administration of the community, including tuberculosis nursing, tuberculosis and venereal disease clinic work, and to a large extent the health production and disease preventive activities in the industrial age-group; and, what is more significant, next year every activity undertaken in the demonstration and every suggestion made will be taken as a community activity.

When the demonstration began, Framingham had only just appointed a full-time health officer, who had under his supervision the following activities: laboratory examinations, quarantine, care of tuberculosis cases, certain police duties and a tuberculosis clinic. Within four years the board of health increased its budget 130 per cent and established four infant clinics, one tuberculosis health station and clinic with consultant on call at all times, one infantile paralysis clinic, one venereal clinic, a tuberculosis nurse visting 100 patients, two infant and preschool nurses visiting 450 babies, and three part-time infant welfare physicians.

Before the demonstration began there were 3039 children in Framingham schools with one part-time physician and one full time nurse. Physical examinations were made only at request of the nurse. After five years of demonstration, at which time there was only a slight increase in the school population, the health organization comprised one full-time physician, one nurse, one dental hygienist (who cleans mouths, holds tooth-brush drill, gives talks to classes, etc.), one dental clinic, and one director of physical education.

THE EFFECT ON INDUSTRIAL WORKERS

Naturally, the demonstration has evoked an intense interest in industry, as the highest death-rates are found in the industrial age-group. As a result of the demonstration, the devices for preventing accidents and procedures for improving the health of the workers have steadily increased. There are approximately 5000 industrial workers in Framingham, nearly half of whom are employed in one industry. When the health demonstration began the health work of this industry consisted of one nurse, one rest room, one-room clinic, a physician on call, and a sick benefit association. After five years of demonstration activity, the health equipment of this same industry consisted of one full-time physician, a three-room clinic, one full-time dentist, a dental clinic, two nurses, one rest room, complete surgical throat and ophthalmologic outfits, and a sick benefit association assuring three weeks in the hospital in any one year if necessary.

The plant was also organized on advanced democratic profit-sharing and management-sharing basis, with considerable participation in control by employees of different grades thru industrial partnership, industrial associates, and shop committee devices. Compulsory examination of new employees is now carried out by the plant physician, this procedure being at the request of the works committee. It must be pointed out that medical and nursing facilities in industry can only functionate fully when developed and operated in very close cooperation with employer and employee, and should be used for the purpose of fitting the man to a job rather than as a means for rigidly weeding the unfit from industry. A Civic League was organized in 1917, and a year later opened its new building with a swimming pool and gymnasium open to the public. General health and educational work has been carried on regularly, and health clubs and community garden clubs are in operation. The two hospitals in Framingham have training schools and the student nurses assist in several important demonstration activities. One of these hospitals has a district nursing service.

The Park Commission has opened five playgrounds under the supervision of a physical director. General conditions in Framingham have undergone many constructive changes. The sewage system has been modernized, the milk supply has been very much improved, the milk consumption has been doubled, and almost complete pasteurization is in effect. Public spitting has been greatly reduced as a result of education and enforcement of city ordinances.

One of the most satisfying and significant results of the demonstration is the interest local physicians have taken in tuberculosis and their efforts to find new and early cases. This has been largely due to the highly efficient consultation service in charge of Dr. P. C. Bartlett, who with scientific skill and exceptional tact and judgment has made the service one of the most valuable features of the demonstration, and utilized by nearly all local physicians. The consultation service is not limited to tuberculosis work, but as far as possible it enters the field of general medicine. This service has attracted nation-wide attention, and is now in operation in Massachusetts, Illinois, New York, Oklahoma, Vermont, and Wisconsin.

THE RESULTS OF THE INVESTIGATIONS

While the demonstration has been on a relatively small scale, it has revealed certain conditions which one may say are representative of the average American community, and has brought out certain standards of community health work which can be advantageously applied to the country at large. Among the most important results of the investigative activities of the demonstration the following should be mentioned:

1. In six years of demonstration the general death-rate has been reduced 16 per cent, the infant mortality-rate has been reduced 50 per cent, the tuberculosis death-rate, 53.6 per cent (the rates being corrected for non-residents and certification errors). While a reduction in these rates may have taken place anyway, or other factors were responsible, attention is invited to the fact that the death-rates in the towns about Framingham which were selected as control towns have experienced only slight reductions in the tuberculosis death-rate.

2. The examination of a representative population indicates that about 1 per cent is suffering from active tuberculosis and an additional 1 per cent from the disease in an inactive form. This corresponds to about ten active cases for every annual death in an average community. Therefore, in a city of 100,000 people, there are probably 1000 cases of active tuberculosis. This is a percentage which has been substantiated by my own tuberculosis examinations of 174,000 American soldiers during the World War. Similar surveys in civil and military groups have given approximately the same percentage. (Of the first million American soldiers examined for military service in the World War, 0.873 per cent were rejected because of tuberculosis.)

3. These demonstration figures may well serve as a guide as to the percentage of tuberculosis which should be reported in a community. When the demonstration started at Framingham, there were only twenty-seven known cases of tuberculosis under care. The average ratio of reported cases to deaths was 3 to 1. After intensive search several hundred cases of tuberculosis were found and the ratio of reported cases to deaths was raised to approximately what it should be, namely, ten cases for every death. This means that a city with 100 deaths a year from tuberculosis should have reported approximately 1000 cases of active tuberculosis annually.

4. The number of cases requiring hospital or sanatorium care has been found to be one or two for every annual death in the community. Consequently, a community should provide at least one, but preferably two beds for every annual death. One may estimate that about 42 per cent of the total active cases under observation during the year will require institutional care. This will include, of course, many short stays in sanatoria or hospitals for educational and hygienic purposes.

5. In the beginning of the demonstration, Framingham was equipped with a tuberculosis dispensary with a part-time nurse and medical attendant at the clinic. There was also an anti-tuberculosis society doing some educational work. This may be considered an average equipment for a city of 17,000 people. With this organization as stated, the ratio of reported cases to annual deaths was 3 to 1. It is evident, therefore, that the average community reports little more than half the cases of tuberculosis and probably most communities report only about one-third. Consequently, no effectual campaign can be waged against tuberculosis when only approximately one-third of the cases are under care, while two-thirds remain uncontrolled and potential sources of infection. This means that an efficient case-finding plan is necessary to bring the unknown half or two-thirds under supervision.

In Framingham a sickness survey carried out by insurance agents and nurses disclosed some new cases after the health survey had been made. However, when practically the same area was canvassed and the residents given a thoro medical examination, nine times as much tuberculosis was found. Therefore, it is felt that routine medical examinations are necessary. This can only be accomplished by means of an educational program, which would have as its basis the evidence that in an average community about 90 per cent of the population are infected with the tubercle bacillus, and of this 90 per cent infected probably 2 per cent have tuberculosis in an active or arrested state, but 10 per cent will eventually die of the disease. Accordingly, the educational program must teach how infection takes place, how children and others must be protected from massive infection by controlling open cases, improving general sanitation, and by the pasteurization of milk supplies. The educational program must also teach that many cases can recover by proper institutional care, and there must be instilled into the community the idea of annual thoro medical examinations, which may be done at the clinic or by the family physician, with the help, if necessary, of the clinic, or consultation service, or by the factory or school physician, in the case of industrialists and children. It has been estimated that one factory or school physician is required for every 3000 individuals. An adequate nursing service must be provided also, of at least one nurse for every 2000 or 3000 people, to do infant welfare, school, factory and home nursing, and follow up arrested cases of tuberculosis.

6. The consultation service is perhaps the most important single measure developed in Framingham for the discovery of tuberculosis. In addition to the foregoing, adequate institutional equipment, community organization, and legislation are necessary.

It will thus be seen that tuberculosis in Framingham is being brought under control, and if these same methods could be applied to the entire United States, it would mean a saving of 80,000 lives a year or more than were lost by the United States in the World War. It would prevent untold suffering and poverty, and when one considers the economic value of human life, it is clear that, measured in the terms of money alone, the program would mean a saving of millions of dollars annually.

Fundamental to the success of such a demonstration is the sympathetic cooperation and support of the local medical profession as well as the community in general. There must be created a strong sentiment for health work. The demonstration should be thoroly grounded in the life, public affairs and institutions of the community. It should show what scientific medicine is and what health movements are, and it should not permit itself to be regarded as a strange something imported for the purpose of destructive criticisms and exposure of official and nonofficial agencies.

Much of the credit for the success of the Framingham demonstration is due to the highly efficient service of its executive officer, Dr. D. B. Armstrong. The willingness and desire on the part of Framingham to develop and support an adequate health program is reflected by the increased expenditure for health from forty cents when the demonstration began to two dollars and thirty-five cents per capita last year.

Aside from local manifestations of benefit from the demonstration, its influence has been national in scope. It has stimulated scores of American communities to adopt new methods for discovering and caring for tuberculosis, as well as for infant welfare work. It has brought about the splendid big Millbank demonstration, which is applying the Framingham data to an entire county in New York State (Cataraugus), to a city of 175,000 (Syracuse), and to a district in New York having a population of 216,000, and fairly typical of Greater New York City as to age-grouping, race stocks, birth and death-rates, economic, social and industrial conditions.

While the Framingham demonstration was primarily on tuberculosis, it has been very broad in its character. It has contributed to better health administration, better recreational facilities, better industrial relations and conditions. It has, in short, not been merely a medical demonstration; it has been a health and social demonstration to promote general healthfulness of the population at large, to prevent disease, reduce mortality, increase productiveness, and promote happiness.

Intraperitoneal Hemorrhage from Ruptured Ovarian Cyst. Louis E. Phaneuf, Boston (Journal A.M.A., Aug. 30, 1924), reports three cases. In 1923 he operated on two women with severe intraperitoneal hemorrhage giving rise to alarming symptoms. The first case was diagnosed as a ruptured ectopic pregnancy; the second was presumed to be an ovarian cyst with twisted pedicle, complicated by acute appendicitis. At operation it was found, in both cases, that the hemorrhage was due to the rupture of a follicular cyst of the ovary. In the third case the bleeding was issuing from a small rent in a corpus luteum of the right ovary. Previous to 1900, the literature is not clear as to the hemorrhages into the peritoneal cavity caused by ruptured follicular and corpus luteum cysts. Up to that time these hemorrhages were not clearly differentiated from those resulting from extra-uterine pregnancy.

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PROPAGANDA FOR REFORM

Camphor in Oil in Heart Failure. Marvin and Soifer have studied the effects of camphor in oil as a cardiac stimulant. They failed to secure evidence of any action on heart rate, respiration, blood pressure, vital capacity of the general clinical condition in which digitalis is frequently promptly effective. Henceforth, the burden of proof that camphor in oil has a rational place in the treatment of congestive heart failure rests with its advocates. All others may well hesitate to place their trust in a drug that seems to have given more promises than therapeutic performances. (Jour. A.M.A., August 2, 1924, p. 362.)

More Misbranded Nostrums. The following products have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act: De Witt's Kidney and Bladder Pills (E. C. De Witt and Co.), consisting essentially of methylene blue, potassium nitrate and plant material, including a volatile oil such as juniper oil. Foster's Backache Kidney Pills (Porto Rica Drug Co.), consisting of potassium nitrate, rosin, fenugreek, uva ursi and an essential oil such juniper. Glycofostina (Henry S. Wampole Co., Balitmore), consisting essentially of strychnin sulphate, sodium calcium and potassium glycerophosphate, alcohol and water. (Jour. A.M.A., Aug. 2, 1924, p. 375.)

Rectal Administration of Digitalis. Digitalis is absorbed rapidly and fairly uniformly from the alimentary tract of man, although some substances in the digitalis group, notably strophanthus products, are unsuited for oral administration. However nausea, vomiting or surgical operations may sometimes interfere with the use of digitalis by mouth. For such emergencies digitalis may be satisfactorily administered by rectum. In many patients with auricular fibrilation, the results have been rapid and beneficial. Rectal digitalis therapy is not intended to supplant the well established oral method of administration, but rather to be used as an emergency measure when the customary mode of introduction is not feasible. (Jour. A. M. A., Aug. 9, 1924, p. 446.)

Sun and Moon Oil and Ointment. Alfred W. Lowrie of Hartford, Conn., an alleged divine healer, mixes religion with his quackery. In a publication by him he is said to have died once, and while dead was ushered into the presence of the Supreme Being. While in heaven, Lowrie was presented with the "key to knowledge" to be used by him when he returned to earth. After Lowrie's visit to heaven, he seems to have started making what he is pleased to call "Sun and Moon Sacred Ointment" and "Sun and Moon Sacred Anointing Oil." The ointment is claimed to contain "vibrations of life from the radioactivity of electricity, magnetism, electrons and atoms." The ointment is to be used externally and internally for a variety of ailments. The A. M. A. Chemical Laboratory found the composition of the ointment to be essentially: petroleum 75.50 per cent, saponifiable fat 17.20 per cent, methyl salicylate 4.00 per cent, "dirt" 0.15 per cent, oil of sasafras, water and undetermined 3.15 per cent. The "sacred oil" is for external and internal use. It was claimed to have no equal for tired and sore feet, rheumatism, neuritis, lameness, hardening of the arteries and nerves, broken bones, skin diseases and other conditions. The A. M. A. Chemical Laboratory found the oil to consist essentially of fixed oil (probably olive oil) 87 per cent, methy salicylate 5 per cent, oil of sassafras 1 per cent, alcohol 2 per cent, water and vegetable extractive 5 per cent. (Jour. A. M. A., Aug. 9, 1924, p. 485.)

Inhalation of "Carbona." A periodic drinker used the cleaning fluid "Carbona" to produce unconsciousness when inhaled. Carbona contains carbon tetrachlorid as its essential constituent; carbon disulphid being generally present also. Carbon tetrachlorid has been tried as a general anesthetic and found unsatisfactory. The carbon disulphid greatly increases its toxicity when inhaled. (Jour. A. M. A., Aug. 9, 1924, p. 461.)

The Therapeutic Use of Digitalis. The Council on Pharmacy and Chemistry has long held that digitalis effects can be obtained satisfactorily in most instances by the oral administration of digitalis itself, the tincture or the infusion, and that the intravenous administration of digitalis preparations is rarely necessary. However, investigation indicates that digitalis preparations are administered intravenously far more frequently than seems to be demanded. Because of the importance of digitalis therapy, the Council decided to appoint a committee composed of men who have made a study of questions concerning the administration of digitalis, and to request this committee to prepart a report for publication which would set forth concisely the limitations of digitalis therapy and the methods of obtaining digitalis effects. At the request of the Council, Drs. G. Ganby Robinson, Paul D. White, Cary Eggleston and Robert A. Hatcher prepared a report. This report brings out the indications for the use of digitalis, the limitations of the drug, its dosage and method of administration. It discusses at considerable length the conditions where the intravenous and intramuscular administration of digitalis may be called for and when the oral administration will be found satisfactory. The report concludes with the statement that the oral administration of digitalis in the form of the standardized powdered leaf, infusion or tincture, meets every requirement of digitalis therapy, with the exception of those relatively infrequent cases in which immediate relief is imperatively demanded, or when nausea or vomiting precluded the oral method, and outlines the intravenous, intramuscular or rectal administration of digitalis bodies when the threatening condition of the patient demands immediate relief. (Jour. A. M. A. Aug. 16, 1924, p. 504.)

Yadil—This is an international fake of British origin. The advertising campaign for Yadil reminds one of Sanatogen in those palmy days when the public could be pursuaded to pay a dollar for a few cents worth of cottage cheese. As Sanatogen was the apothesis of cottage cheese, so Yadil is supposed to be a glorified and esoteric form of garlic. A part of the Yadil advertising campaign is an alleged history of garlic as a curative agent. Just what the theory of its use may be is not clear. Possibly the basic idea is that no self-respecting germ will want to tarry in an organism saturated with garlic. Yadil is put on the market by Clement and Johnson Bros. of London. The concern has a subsidiary company for its publicity, known as the Yadil Press, Limited (formerly called "Quality Press, Limited"). The American agents are E. Fougera and Co., New York. In the British Isles, newspapers and magazines are carrying full page and middle page ads spreads for Yadil for tuberculosis, for cancer, for scarlet fever, for gonorrhea, and for what-have-you.

NEW ADVERTISEMENTS

Attention is called to the announcement of Lea & Febiger (page 3), presenting a volume of importance. Facts relative to Washington Referendum No. 16 (page 20) are offered by Pure Food Products Committee.

NORTHWEST MEDICINE
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Devoted to the interests of the Medical Profession of the Pacific Northwest

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EDITORIAL

TESTICULAR TRANSPLANTATION

During recent years much has been published regarding the transplantation in man of the testes of animals, particularly the goat and ape, for the purpose of restoration of youth and especially for revivifying the sexual system. Altho this procedure and its reputed results have been discredited by recognized medical authorities, yet certain physicians continue to advocate it and it maintains a certain vogue among the laity, fostered by the seductions of lurid literature and skillful advertising. It is well known that testis grafts, implanted ordinarily in the abdominal wall, degenerate in a short time, are destitute of function, and are merely foreign bodies.

Interesting and suggestive facts on this subject are presented by Moore*, who has conducted elaborate experiments in this line of work. He demonstrates that these grafts from rats and guinea pig transplantations become quickly transformed in their essential features, when removed from their normal habitat, the scrotum. This result is obtained when the testis is confined in the peritoneal cavity for even a few days. The seminiferous tubules are found devoid of germinal cells and as a functioning organ the testis ceases to be effective. It was noted, however, that if such a gland were thus elevated into the peritoneum and retained even as long as twenty-four days, then returned to the scrotum, and the animal killed after two and one-half months, the replaced testis had almost completely recovered from its degenerated condition. It was evident, therefore, that the degeneration of the gland was in some way due to its removal from its normal relations to the scrotum. Further investigation disclosed the fact that these striking changes were dependent upon the difference in temperature in the scrotum and other parts of the body, where the gland had been placed. Thus in the white rat it was observed that the scrotal temperature was 8° C. lower than that of the peritoneal cavity. The author states that "the scrotum of mammals is now to be considered a local thermo-regulator for the testes and the regulatory or functional capacities are indispensable for the production of differentiated germ cells or the maintenance of those already produced."

This study appears to be adequate proof of the ineffectiveness and absurd practice of testicular transplantation for the purpose for which it has hitherto been employed. The author states that he has succeded in transplanting the testis into the scrotum, where it has continued in a normal condition with continuous production of germ epithelium. Whether or not results in the human might be obtained by this form of transplantation has not been demonstrated.

END-RESULTS OF HOSPITAL STANDARDIZATION

The regional meeting of the College of Surgeons, comprising British Columbia, Oregon and Washington, was held in the High School at Everett on August 11 and 12. For the first time since the program of hospital standardization was launched by the College of Surgeons, end-results were presented. Fractures as treated in three of the standardized hospitals in Seattle were discussed by Dr. H. T.Buckner, who made a careful study of the case records in these hospitals. Perhaps nothing could show the advantage of team work as carried on in the hospitals in the larger cities in Washington, thru a central standardization committee, as did this report. In the three large private hospitals in Seattle the percentages shown were approximately identical, which would justify the contention of those interested in standardization that all that is necessary to have uniform results in hospitals is to have uniform regulations governing all procedures in them. Upwards of 500 cases were reported by Dr. Buckner, which in itself comprises a fairly large report of work performed by average surgeons. The reports would indicate that fracture work in the Northwest is equal to if not superior to fracture work elsewhere. Dr. F. A. Bird, Medical Director for the Department of Labor and Industries, in discussing Dr. Buckner's paper, stated that what is true of the hospitals of Seattle obtains thruout the state and that during the past four years, since standardization has been developing, there has been a gradual decrease in the cost per patient to the state and a gradual increase in the efficiency of the work being done.

Dr. Mabel Seagrave reported on the obstetric work during the past two years at the Seattle General Hospital. There is, perhaps, no branch of medicine that strikes the attention of the laity as does the department of obstetrics. Every family, of course, is vitally interested in anything that improves conditions in obstetric practice. The remarkable report presented by Dr. Seagrave places the Seattle General and its staff among the leading hospitals of the country, but, as in the case of fractures, reports from other hospitals using standardized methods probably would compare favorably with that of this hospital. The eastern representatives of the College of Surgeons stated they would take these reports East to use as illustrations of what can be done under standardization. It is gratifying to the profession of the Northwest and particularly to the Seattle hospitals to know that the Northwest was the first to present the end results of standardization.

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* Moore, C. R.: The Behaviors of the Testis in Transplantation, Experimental Cryptorchiadism, Vasectomy, Scrotal Insulation, and Heat Application. Endocrinology, July, 1924.

The meeting was attended by a large number of hospital superintendents and trustees as well as Fellows of the College. Perhaps nothing has brought the various departments of the hospital together during the past several years as has this movement of standardization, fostered by the College of Surgeons. It was refreshing to see doctors discussing the problems of the hospital and superintendents and trustees discussing the problems that confront the medical men within the hospital. By working together for the common good results such as reported at Everett are inevitable.

IS IT STATE MEDICINE?

A situation exists in Oregon, relative to an initiative bill embodying an amendment to the workmen's compensation law, which is of vital moment to the medical profession of that state and should be of interest to the whole profession of the Northwest. Some months ago a conference was held between representatives of the employers, employees and physicians, for the purpose of preparing amendments to the industrial insurance act which might meet the views of all of these interests. It was found impossible to agree on any proposed measure. Thereupon the labor interests inaugurated the initiative measure which will go before the voters of the state in the November election.

It is stated that many parts of this amendment are worthy of support and without objection. The feature, however, which concerns the medical profession is contained in the paragraph which substantially extends the privileges of the industrial insurance act to all citizens of the state. If this latter were adopted it would appear to be the opening wedge for the establishment of state medicine with all its objectionable features, which have already been demonstrated in England and which have been introduced to a limited extent in some of our states. Attention is called to the editorial from the Oregon Public Health Bulletin, appearing under our Public Health League notes on another page, which deals more extensively with this matter.

A question of public health importance seems to be involved in the matter that will be presented to the voters of Washington at the November election thru referendum measure No. 16, whose purpose is to prohibit the addition of small quantities of milk products to hydrogenated vegetable oils, thus to impart to them the odor and flavor of butter. The legitimate culinary uses of vegetable oils are not prohibitew by the bill nor is oleomargarine interfered with except when it trades upon the taste and flavor of real butter. All physicians are interested in the question of pure food and are concerned with the economic welfare of the farming industry. Therefore their attention is thus called to this measure and the appeal regarding it, presented by the Pure Dairy Products Committee.

THE OREGON PLAN FOR THE PUBLIC HEALTH LEAGUE

The Public Health League has been in existence a sufficient time in the states of the Northwest and has so thoroly demonstrated its usefulness, that no argument is needed to favor its future continuation. The question has been raised, however, as to the most efficient manner of financing and increasing its field of activity. In the state of Oregon, where have germinated many new ideas in many fields of activity, this question has been considered during the past two years. After a year for discussion and education the plan was adopted and has been in effect during the past year, which is now designated as the "Oregon plan."

In this state as well as in Washington and Idaho, where the public health league has also been established for several years, it was originally maintained by voluntary membership on the part of those interested in public health problems. Since the benefit accruing, however, was received by all members of the profession, it was thought that the cost should justly be distributed among all the physicians of the state society. Accordingly, the new plan, in force among the Oregon profession during the past year, has comprised a membership fee of twenty dollars for the state society which has made each member automatically a member of the public health league. Not only has this distributed the burden equally among all members of the society, at the same time providing sufficient funds for its maintenance, but it has served to make each member vitally interested in the work of the Public Health League, since a man's personal interest is necessarily centered upon any enterprise in which he invests his money.

At the recent annual meeting of the Washington Association an amendment to the constitution was presented, providing for a twenty dollar membership fee, making each member at the same time a member of the public health league. The matter was discussed at some length but it was soon evident that the time was not opportune for such radical action. It was, therefore, deferred for a year in order that the question may be presented to each component county society. One argument against the plan was to the effect that, while the league remains a separate organization with members from dentists, doctors and the laity, it demands respect and consideration, but let it become an integral part of the medical association and the charge will appear that it is a selfish institution for the benefit of the doctors themselves. Whether or not this argument has force, it is worthy of consideration.

At the recent meeting of the Idaho State Association the same matter was presented and discussed. Here arose other problems peculiar to the conditions of that state. Action likewise was deferred for another year in order that it might be presented to the profession of the state. Thus it is noted that the public health league has become a vital factor in the medical and health considerations of the states of the Pacific Northwest. It will undoubtedly figure largely in matters of this sort during coming years.

THE WASHINGTON MEETING IN THE MOUNTAINS

While there may have been medical meetings more largely attended, surrounded by the numerous attractions of city life, no gathering of the Washington State Medical Association has been more enjoyable than that at the Big Four Inn last month. The attendance was representative of all parts of the state. It was especially noteworthy by reason of the number of wives and children in attendance, in some cases including all members of the family, comprising a total of about four hundred visitors. In the absence of the ordinary diversions of city life, everyone had abundant opportunity to get acquainted, which privilege appeared to be fully enjoyed. The miniature golf links at the rear of the hotel was in continuous use. The disciples of Isaac Walton had abundant opportunity to make collections of the finny tribe from the adjacent Sillaguamish river. A delicious repast was even enjoyed by some who were not expert casters. A group of early breakfasters, under the guidance of the medical giant from Spokane, whose chance remark concerning a catch of fish in the ice-box immediately produced results, greatly to the surprise of all concerned, were enabled to breakfast off this purloined collection of trout, accompanied by great hilarity and jocularity. Subsequent remorse, however, sufficed to adequately compensate the rightful owner of the succulent catch.

An addition to the hotel, completed the night of the doctors' arrival, provided a satisfactory meeting place, undisturbed by the ordinary agitations of the congested city. The papers on the program were well selected and enjoyed by a good-sized audience. They were all productions of members, except two by Dr. A. B. Hepler, of San Francisco, both of which conveyed a message to the hearers, and a talk by Dr. T. J. Watkins, of Chicago.

Two sessions a day sufficed for the literary efforts, leaving the evenings for the social enjoyments, connected with an hotel thus located. The profession of Everett is to be congratulated for providing such a unique and enjoyable setting for this annual meeting, which will be memorable in the annals of the association.

SCIENTIFIC REPORT OF THE VANCOUVER MEETING

As stated in a previous issue, it has been planned to publish in this journal the papers presented before the recent meeting of the Pacific Northwest Medical Association at Vancouver. Owing to various reasons, the number of papers available for publication will be fewer than formerly anticipated. Those on hand and to be received later will be published in coming issues at times which seem most suitable. In the meantime, it seems advisable to publish notes on papers and addresses presented as recorded by Dr. Epplen, Secretary of the Association, which appear in this issue. This publication will not interfere with subsequent presentation of papers in full.

MEDICAL NOTES

A New Chair at Jefferson Medical College. In recognition of the far reaching developments of bronchoscopy in the diagnosis and treatment of diseases of the lungs and of esophagoscopy and gastroscopy in the diagnosis and treatment of diseases of the esophagus and stomach, the Board of Trustees and Faculty of The Jefferson Medical College have created a new Chair to be known as the Department of Bronchoscopy and Esophagoscopy. Dr. Chevalier Jackson, formerly Professor of Laryngology in The Jefferson, has been elected to the Professorship of the new Department. Dr. Fielding O. Lewis has been elected to fill the Chair of Laryngology vacated by Dr. Jackson.

OREGON

The Naturopath Bill. At the last session of the legislature a measure was introduced regulating the practice of naturopthy in Oregon. It was rejected, as not being in the interests of the people of the state. In the November election an initiative bill with this same objective will be presented to the voters of the state. It will permit poorly educated naturopathic practitioners to practise with practically the same conditions as educated physicians, with authority to sign death certificates and all other similar official reports. Supporters of this bill elaborate the efforts of Nature in the production of results in the human body in health and disease and appear to claim that practitioners of this cult are especially proficient in carrying out Nature's requirements. It is to be hoped that the voters of Oregon may see fit to retain this cult in retirement.

The Pacific Coast Health Conference. This conference was held in Portland the first week of last month. In connection with it was the meeting of the county and city health officers of Oregon. A large number of physicians, interested in public health problems, were in attendance. The Pacific Coast meeting will be held in San Francisco next year.

Eastern Oregon District Medical Society, at its recent meeting at Bingham Springs, elected the following officers for the ensuing year: President, Dr. W. P. McApory, La Grande; Vice President, Dr. J. B. Gregory, Wallowa; Secretary-Treasurer, Dr. C. G. Bartlett, Baker.

Medical Arts Building. A company has been organized in Portland by physicians and dentists for the construction of the Medical Arts Building on the half block on Taylor Street from Tenth to Eleventh. It is announced that the building will cost over one million dollars. It is expected construction will begin in the near future.

Dr. J. A. Reuter, of The Dalles, has returned home after six months spent abroad, during which time he attended clinics at Vienna, London and Paris. He was also present at the Olympic games at the latter city.

Resigns From Staff. Dr. E. L. Smythe, of the staff of the United States Veterans Hospital in Portland, has resigned. The rumor has it that other resignations might follow.

Promoted in Rank. Dr. M. B. Marcellus of Portland, formerly Lieutenant Colonel in the Medical Division of the Officers Reserve Corps, has been promoted to the rank of Colonel.

Dr. George H. Behrs, who has practised in La Grande for the past eight years, has located for practice at Salem.

WASHINGTON

Healthful Cities in the Northwest. At the annual meeting of the county health officers, held in Seattle last month, it was announced that Seattle leads cities of more than 250,000 population in infant mortality record, forty-nine out of every thousand born having died in 1923. Portland is second with a record of fifty-three. Of cities between 100,000 and 250,000 population, Spokane leads with a rate of forty-eight deaths. Among the states, Washington is first with an infant mortality of fifty-one, Oregon being second with a rate of fifty-three.

New Hospital Dedicated. The new St. Peters Hospital, at Olympia, was dedicated late in July in the presence of a large audience of visitors. It is a five-story structure, two hundred and ten by one hundred and seventy feet in area. It is built of reinforced concrete and terra cotta and presents a handsome appearance. It cost approximately $450,000. It will accommodate three hundred patients. The following week the patients from the old hospital moved to the new building.

Consolidation of Hospitals Proposed. A measure has been proposed to the city council of Seattle and county commissioners for the erection of a new hospital to replace and consolidate the existing city and county hospitals. Both of these institutions have become inadequate for their purposes and it is generally recognized that a modern, up-to-date institution, consolidating the two, would save money and serve more efficiently.

Addition to Hospital Contemplated. The county commissioners of Pierce County have announced the building of an addition to the county hospital at a cost of $100,000. This will be constructed some time in the coming year. It will be built of brick with accommodations for fifty or sixty additional patients.

New Hospital Considered. It is stated that eighteen leading physicians and surgeons of Walla Walla have formed a company for the erection and equipment of a non-sectarian hospital to cost $150,000. It will be financed by bond issue. It will be erected on a site, three hundred by two hundred and eighty feet.

Shrine Hospital for Crippled Children. It is stated that St. Luke's hospital in Spokane will be selected as the Shrine hospital for crippled children. Five of such hospitals have already been organized thruout the United States. Children are eligible under fourteen years of age who are unable to pay for services.

Goat Milk Sanitarium Proposed. Citizens of Anacortes propose to establish a sanitarium at Cypress island, where a regime of goat milk diet will be featured. It is proposed to build cottages and make it attractive for a summer resort. The company has a herd of 500 milch goats.

Nurses' Home Planned. Preliminary plans have been made for the erection of a new nurses' home in connection with Providence hospital at Everett. The building will be erected on the site of the old hospital which is being wrecked. Plans call for a building with accommodations for forty nurses.

Cushman Hospital to Remain. The latest information concerning Cushman Hospital, at Tacoma, is to the effect that it will be retained for general medical and surgical cases. The present tuberculous patients will be transferred to Walla Walla and the chronic nervous cases to American Lake Hospital.

Clinic Disbanded. The Tacoma Clinic, one of the pioneer institutions in the Northwest for group practice, has been disbanded. The building originally erected for this purpose has been converted into an apartment house.

Nurses Ask for Shorter Hours. The Nurses Association, of Spokane, has adopted a resolution to establish a twelve-hour nursing day at all standard hospitals. It is stated that the wages for nurses at present cover a twenty-four hour day and it is said that most large cities have accepted the twelve-hour plan, and that in New York the eight-hour nursing day is in sight. Apparently the nurses propose to keep abreast of the times in respect to hours of labor.

First Full Time Health Unit. At the recent annual meeting of state health officers in Seattle, attention was called to the fact that Yakima instituted the first full time health unit in the United States. Health Officer H. H. Smith, of Yakima, says that Yakima county is being continually cited by speakers and authorities on account of this priority.

Pioneer Changes Residence. When a physician lives for twenty-seven years in one location, a change is worthy of comment. Dr. W. C. Cox, one of the pioneers of Everett, last month moved from his home at Colby and California streets, which he built twenty-seven years ago when Everett was an infant. He is to be congratulated on the snug sum for which he exchanged his property.

Officers Chosen. At the recent meeting of the American College of Surgeons at Everett, Dr. G. E. Eagleson of Seattle was elected chairman of the Washington division; Dr. E. A. Sommer of Portland, chairman of the Oregon division and Dr. D. M. Robertson, of Vancouver, chairman of the Vancouver, B. C., division.

Visit from German Physician. Dr. Adelbart Fuchs, Professor of Opthalmology at University of Vienna, recently visited some of the cities of the Northwest, following a tour of medical centers in China and Japan. He is an expert mountaineer and took sufficient time to climb Fujiama and Mount Rainier.

Dr. C. A. Veasey, Jr., of Spokane, who has recently graduated in medicine and served several years in eastern hospitals and in eye and ear infirmaries, has returned home to be associated with his father in this special line of practice.

Dr. J. F. Tifft, who has practised for some years at Colfax, has moved to Ketchikan, Alaska. During his residence at Colfax he was a prominent citizen, serving as councilman and mayor at two different periods.

Dr. Harry H. Kretzler, who has served as house physician at the Swedish hospital in Seattle during the past year, has located for practice at Edmonds.

Dr. A. E. Wickins, who has practised for seventeen years at Hamilton, Ontario, has located for practice at Bellingham.

Dr. R. S. Forbes, of Seattle, has returned home after six months of travel and study in Great Britain, France and Italy, during which time he visited prominent clinics in the leading cities of these countries.

Physician Promoted. Dr. J. N. Collard, in charge of the Indian Hospital at Fort Spokane, has been appointed as government medical inspector of Indian service for the Pacific Coast district. He has been with the Indian service for thirty years.

Dr. D. V. Smith, who has practised for some time at Steilacoom, has located for practice at Prosser.

Dr. J. F. Gibson, who has been practising for some time at Paris, Texas, has located for practice at Olympia.

IDAHO

Meeting of American College of Surgeons. The intermountain section of the American College of Surgeons, including Colorado, Idaho, Utah, Montana and Wyoming, held a meeting at Pocatello, Aug. 25 and 26. Sessions were held at the Pocatello High School, with afternoons and evenings for the discussion of hospital problems, standardization and the reading of papers. Mornings were devoted to clinics in the hospitals. On the evening of the first day, a community health meeting was held, attended by a large audience of the general public. Addresses were delivered on hospitals, the cancer problem, scientific medicine and health problems. As is usual with these clinical conferences, one of the most competent and important features was this public meeting.

MONTANA

Spotted Fever Reduced. It was recently reported that with the spotted fever season about over for Montana, there had been 38 cases with five deaths. This is a decrease from 48 cases with thirteen deaths the previous year and 58 cases with 15 deaths in 1922. Fatal cases occurred in the counties of Fallon, Missoula, Garfield, Rosebud and Yellowstone.

Infantile Paralysis. Last month a large number of cases were reported in the state of infantile paralysis. Missoula reported fourteen cases and seven deaths. The opening of public schools was delayed in that city until the middle of September and children under sixteen were prohibited from attending theatres and Sunday schools.

Dr. K. W. Berry has recently moved from Billings to Montesano, Wn.

REPORTS OF SOCIETY MEETINGS

MONTANA STATE MEDICAL ASSOCIATION

REPORT OF MINUTES OF THE FORTY-SIXTH ANNUAL MEETING OF MONTANA STATE MEDICAL ASSOCIATION AND TRANSACTIONS OF HOUSE OF DELEGATES, HELENA, MONT., JULY 9-10, 1924.

The Forty-sixth Annual Meeting of the Medical Association of Montana was called to order in the Placer Hotel, Helena, July 9, 1924, Wednesday, at 9:30 a. m., by the President, Dr. R. C. Monahan, of Butte.

Joseph M. Dixon, Governor of Montana, made the address of welcome, the response to which was made by John A. Donovan of Butte.

The Secretary read the minutes of the last meeting which were approved as read.

The Third Vice-President, Dr. L. C. Ford of Lima, was called to the chair while the President read his address, which dealt with medical economies.

Dr. R. R. Parker of the U.S.P.H.S. of Hamilton, presented a paper on **Toularemia.** This was discussed by Drs. Hitchcock, Cogswell, Wilder and Parker.

Dr. B. H. Frayser of Fort Harrison, told about **The Early Diagnosis of Tuberculosis.** Remarks were made by Drs. Grigg, Fortin, Tracy, Deal, Porter, Horsky and Frayser.

Recess for lunch was taken.

Dr. Henry Schmitz, of Chicago, presented **The Clinical Aspects of Treatment of the Cervix.** This was discussed by Drs. Porter, Garberson, Karsted and Schmitz.

Dr. C. A. Smith, of Seattle, Editor of Northwest Medicine, told of the inception, growth and future prospects of the journal.

Dr. J. H. Bridenbaugh, of Billings, told about the **X-Ray Treatment of Toxic Goiter.** Remarks were made by Drs. Schmidt, Attix, Wilder and Bridenbaugh.

Dr. R. Horsky, of Helena, read a paper on the **X-Ray Diagnosis of Diseases of the Chest.** A few remarks were made by Dr. Vidal.

Dr. M. A. Walker, of Dillon, presented **Cranial Radiography.** This was discussed by Drs. Donovan, Dunlap and Walker.

Dr. E. R. Schmidt, of Billings, read a paper on the **Surgical Treatment of Perforating Ulcers of Stomach and Duodenum.** This was discussed by Drs. Irwin, Wilder, Porter, Karstad, Schmitz, Tracy and Schmidt.

The meeting was adjourned.

Thursday morning the meeting was called to order at 9:30 by the President, Dr. R. C. Monahan.

Dr. M. J. Scott, of Butte, read a paper dealing with **Theories of Cancer.** This was discussed by Drs. Schmitz, Freund and Scott.

Dr. H. B. Tracy, of Butte, gave a paper which dealt with the **Modern Diagnosis and Treatment of Epilepsy.**

Dr. R. C. Hall, of Anaconda, told of **A Good Method of Wound Closure.** Dr. H. Schwartz, of Butte, made a few remarks on the subject.

Dr. R. M. Wilder, of Rochester, Minn., presented the **Indications for the Use of Insulin and Rigid Dietary Management of Diabetes.** This was discussed by Drs. McGill, McPhail, Dobos and Wilder.

Dr. F. F. Attix, of Lewistown, read a paper on **Sarcoma in Long Bones.** Discussion of this subject was contained by Drs. Larson and Sievers.

Dr. W. H. Stephan read a paper on **Cures, Cults, Fads and Quacks.** Dr. McGill made a few remarks on this topic.

Dr. J. L. Treacy, of Helena, presented **Hydrocephalus** and showed a specimen.

This concluded the scientific portion of the program.

A recess of ten minutes was taken and the meeting was called to order for the transaction of business.

The report of the Compensation Committee was read. Dr. Irwin moved its adoption. Seconded Dr. Attix. Discussed by Drs. Donald Campbell, Pigot, Gans and Larson. Carried.

It was announced that the House of Delegates had adopted a resolution favoring the group plan of medical protective insurance with the Aetna Insurance Company.

The election of officers resulted as follows:

President, Dr. George McGrath, Hamilton; First Vice-President, Dr. T. A. Grigg, Butte; Second Vice-President, Dr. J. L. Treacy, Helena; Third Vice-President, Dr. A. C. Knight, Philipsburg; Secretary-Treasurer, Dr. E. G. Balsain, Billings; Councillors, Drs. J. P. Ritchey, G. O. Dayton, A. W. Deal, R. H. Beach and W. F. Hamilton.

Dr. E. M. Gans thanked the visiting Doctors Henry Schmitz, of Chicago, R. M. Wilder, of Rochester, and C. A. Smith, of Seattle, for their help in making this annual session such a good one.

Dr. Donald Campbell for the Association thanked the medical men of Helena, the press of Helena, the management of the Placer, the Montana Club and all others who had been so courteous to the association during its session. He also moved that a vote of thanks be given Miss Edith Briscoe who acted as registration clerk thruout the session.

The meeting adjourned.

HOUSE OF DELEGATES

The Forty-sixth Annual Meeting of the House of Delegates was called to order in the Placer Hotel, Helena, Wednesday noon, July 9, 1924. The delegates presented credentials.

The roll was called and the following responded:

Cascade, Irwin, Porter, Andrews. Deer Lodge, Dunlap. Fergus, Attix. Hill, Husser. Lewis and Clark, Treacy. Western Montana Medical Society, Haas. Musselshell, Pigot. Park, Leard. Silver Bow, Tracy, Karsted, Donovan. Yellowstone, Farr, Bridenbaugh.

In addition, the following councillors were present: Hitchcock, Gans, McGrath, Grigg, Stephan.

There being no contests, it was announced there was a quorum present and the meeting was called to order by the President, Dr. R. C. Monahan, of Butte.

The minutes of the preceding meeting were read and approved.

The delegate to the A.M.A., Dr. C. T. Pigot, of Roundup, made a very good report of the annual session in Chicago.

Dr. J. L. Treacy presented a resolution on the U. S. Indian Medical Service. It was referred to a committee composed of Drs. Treacy, Irwin, and Porter.

By letter of Dr. B. L. Pampel, of Livingstone, a resolution drawn up by journey-men barbers of Montana, in regard to a state license law for them, was presented. This was referred to the Public Health Committee.

Dr. T. A. Grigg, Chairman of the Council, made the annual report for the councillors. The Council had a meeting March 8, 1924, in Butte.

The Secretary-Treasurer's books were turned over to an auditing committee, composed of Councillors Gans, McGrath and Hitchcock.

The Board of Health nominating committee was announced, composed of Drs. Donovan, Irwin and Leard.

The Place of Meeting Committee was announced as Drs. Farr, Andrews and Tracy.

All committees were instructed to get their reports ready for the next meeting.

Adjourned to meet Wednesday evening.

The House of Delegates was called to order Wednesday evening at 7:30 by the President, Dr. R. C. Monahan.

The following delegates were present: Irwin, Porter. Andrews of Cascade; Dunlap of Deer Lodge; Attix of Fergus; Haas of Western Montana; Pigot of Musselshell; Laird of Livingston; Tracy, Karsted, Brindjonc of Silver Bow; Farr and Bridenbaugh of Yellowstone.

In addition, the following members were present: Donald Campbell, Gregg, Grigg, R. C. Davis, Donohue, Donovan, Hitchcock, McGrath.

Dr. J. A. Donovan made the report for the Legislative Committee. He asked that the members cooperate with the committee at the next legislative session and in the meantime size up the various candidates for office and support the most worthy, not alone with the view to helping the medical profession, but also the public.

Dr. E. M. Gans reported for the Compensation Committee. He told of the two meetings held with the Chairman of the Industrial Accident Board in regard to the fee schedule of the Board and explained that the Board maintained it had the right to put out a fee schedule naming such fees as it wished; that the law was so constituted now that two weeks and one hundred dollars were the time and financial limits for medical service, hospital, nursing and supplies and until this was changed by the legislature, those injured and the doctors could hope for no more compensation. Drs. Attix and Donohue, in discussing compensation, brought out one or two points that did not seem to be clear to the majority of members present. Dr. E. M. Porter moved that the committee reconsider the question of compensation and the relation of the Medical Association to the Industrial Accident Board and report to the House of Delegates Thursday. Seconded Dr. Dunlap. This was discussed by Drs. Tracy, Monahan, Attix and Irwin. Carried.

Dr. Donohue moved that Drs. Porter and Attix be added to the committee. Seconded Dunlap. Carried.

Dr. Pigot discussed the circulation of the magazine Hygeia. He suggested that the county secretaries busy themselves to increase the number of subscribers. Dr. Irwin suggested that the Boy Scouts be urged to sell the magazine. The President appointed Drs. Irwin, Karsted and Porter to consider this matter and bring in a report at the next meeting.

In the absence of Dr. E. M. Larson, Chairman, Donald Campbell reported for the committee on Medical Protective Insurance as follows: Having considered the offers made by the U. S. Fidelity and Guaranty Company, the Hartford Accident & Indemnity Company and the Aetna Insurance Company, it was found that the figures of the Aetna were more favorable for a group policy, therefore, the committee felt that it would be well to accept the offer of the Aetna Insurance Company. The report was discussed by Drs. Porter, Brindjonc and Donovan. Dr. Tracy moved that we accept the report and that those who wished to take out the group insurance do so with the Aetna. Seconded by Dr. Irwin. Carried. Meeting adjourned.

The House of Delegates was called to order Thursday noon by the President, Dr. R. C. Monahan, the following delegates responded to the roll call:

Cascade, Irwin, Porter, Andrews; Fergus, Attix; Lewis and Clark, Treacy; Western Montana, Haas, McCarthy, Ritchey, Hayward; Musselshell, Pigot; Silver Bow, Karsted, Brindjonc; Yellowstone, Farr and Bridenbaugh.

The following members were present: Grigg, Dayton, Porter, Donald Campbell, Lanstrum, Donohue, Gans, Larson.

The Board of Health nominating committee recommended the following five names for the Governor's consideration: E. M. Porter, Great Falls; C. C. Wallin, Lewistown; J. A. Lamb, Kalispell; A. A. Husser, Havre; M. D. Hoyt, Glasgow.

It was moved by Dr. John A. Donovan that the report of the committee be accepted. Seconded J. H. Irwin. Carried.

The Auditing Committee reported the Secretary-Treasurers' books balanced and were in good shape. It was moved by J. H. Irwin that the report be accepted. Seconded J. L. Treacy. Carried.

The report of the committee on the place of next meeting was made by Dr. E. M. Farr. Lewistown was chosen. Moved by Dr. Farr that the report be accepted. Seconded by E. M. Gans. Carried.

The committee which considered the affairs of the medical journal of our association, Northwest Medicine, brought in the following report. Your committee appointed to consider the affairs of Northwest Medicine, the Association Journal, recommend the following: First, That we as an association accept the invitation of the Northwest Medicine Publishing Association to share equally with the states of Oregon, Washington and Idaho in its management by the election in the House of Delegates of three trustees to represent the Medical Association of Montana in governing and directing the publication of said journal; second, that we agree to pay two dollars per year per member for said journal beginning with the year 1925. Signed E. D. Hitchcock and L. G. Dunlap. Dr. Hitchcock moved the adoption of the report. Seconded by Dr. Larson. Carried.

Dr. J. L. Treacy, reporting for the committee on the resolution concerning the U. S. Indian Medical Service, recommended the adoption of the resolution which dealt with the inadequacy of the medical and nursing staff, their underpayment, the number of cases of trachoma and tuberculosis and urged that the Secretary of Interior, Dr. Work, investigate affairs and better them. Seconded by Donald Campbell. Carried.

The committee, composed of Drs. Irwin, Karstad and Porter who were to consider how best to increase the sale of Hygeia, brought in the following report: "The Secretary is requested to write each county medical society urging the members to support Hygeia and to try to secure new subscribers for the same. It is suggested that the sale be discussed with the Boy Scouts. In this way the Scouts would be doing a good work for which they would be amply repaid by cash or premiums." Dr. Irwin moved the adoption of the report. Seconded by Dr. Karstad. Carried.

The report of the Compensation Committee was given by Dr. Gans and is as follows: "Your committee, appointed to consider compensation and the relations of the Medical Association and the Industrial Accident Board, recommended, first, it is desirable to raise the present maximum amount from one hundred to five hundred dollars; second, to extend the present fourteen days limit to a period of six months; third, that the Industrial Accident Board recognize and adopt the minimum fee schedule of the Medical Association of Montana which is accepted by the U. S. Industrial Accident Board; fourth, that a copy of these resolutions be spread on the minutes of the Medical Association of Montana, and a copy be mailed to every member of the medical profession in our state and to the Industrial Accident Board and to the legislature; fifth, that the compensation committee of the association have power to act for the Medical Association of Montana in accordance with these resolutions." Signed E. M. Gans, C. T. Pigot, F. F. Attix, E. M. Porter. Dr. Gans moved the adoption of these resolutions. Dr. Karsted seconded. Discussion of this question by Drs. Pigot, Lanstrum, Gans, Attix, Larson, Tracy, Irwin, Donald Campbell. Carried.

Dr. H. B. Tracy moved that the constitution and by-laws of the Association be changed to abolish the offices of Second and Third Vice-President and create the office of President-elect. Seconded by Dr. Attix. Carried.

A telegram was received from Dr. John Dimon, of Three Forks, concerning a baby who died of whooping cough under the treatment of a christian science healer and asked that an investigation be made. Dr. J. L. Treacy moved that this matter be laid on the table. Seconded by Dr. Farr. Carried.

The Public Health Committee asked more time for the consideration of the barbers' communication. Dr. E. M. Farr moved that the committee's wish be granted. Seconded by Dr. Tracy. Carried.

Dr. J. H. Irwin moved that the election of officers be done in the general assembly. Seconded by Dr. Andrews. Carried.

Dr. E. D. Hitchcock informed the Association that the Northwest Pacific Medical Association, of which Dr. E. M. Larson of Great Falls will be President in 1926, would like to meet in Glacier National Park and have us substitute their regular annual meeting for ours in 1926, providing two hundred medical men of Montana will each pay a ten dollar registration fee in advance. This was discussed by Donald Campbell, O. M. Lanstrum. Dr. Hitchcock moved that the President appoint a committee of three to undertake to interest the medical men of Montana in this proposed meeting, to attempt to raise the two thousand dollars and if successful to invite the Northwest Pacific Medical Association to meet in Glacier Park in 1926. Seconded Dr. Attix. Discussed by Drs. Karsted, Donald Campbell. Carried.

The President appointed as this committee, E. M. Larson, Donald Campbell, J. L. Treacy.

The meeting adjourned.

E. G. Balsam,
Secretary.

The Appendix in Relation to or as the Cause of Other Abdominal Diseases. Charles H. Mayo, Rochester, Minn. (Journal A. M. A., Aug. 23, 1924), is convinced that the appendix undoubtedly is the source of chronic infection in the upper abdomen, and, as a rule, should be examined and removed during operation on the gallbladder or on ulcers of the stomach or duodenum. If, in examination of the abdomen before operation for pathologic conditions other than appendicitis, the appendix is found to be much more seriously diseased than the symptoms had indicated, or if in operations on the chronic diseased appendix the condition is found to be much more extensive and serious than was expected from the symptoms, the appendix should be considered a possible focus of disease involving the upper abdomen, and the exploration should be extended to this region by increasing the length of the incision, which is possible if it is a right median rectus incision.

PACIFIC NORTHWEST MEDICAL ASSOCIATION

MINUTES OF SCIENTIFIC SESSIONS OF THIRD ANNUAL MEETING OF PACIFIC NORTHWEST MEDICAL ASSOCIATION, VANCOUVER, B. C., JUNE 26-28, 1924.

The meeting was called to order June 26, at 8:45 a. m., by the President, Dr. Homer D. Dudley.

TWO COMMON TYPES OF HEADACHES

Dr. Charles Hunter, of Winnepeg, Manitoba, presented this topic. Dr. Hunter, in introducing his subject, stated that he would talk on migraine and indurative headache.

Migraine is a disease of unknown pathology, recurring at frequent intervals, beginning before the age of thirty and continuing, with varying severity, until the age of forty-five or fifty, when, in many cases, it disappears. Each attack is preceded by certain signs or prodromata; the patient is at first dull and suffers frequently from intestinal upsets.

In the etiology, the frequency of heredity is very great, fifty per cent of the patients having either father or mother who has had the disease.

Onset after the age of thirty-five is rare; most cases begin before thirty; in women it disappears very often with the menopause, altho a few cases seem to be more severe after than before; it disappears during acute infections, such as typhoid, and is rare during pregnancy.

The prodromata may come on suddenly; more often they are preceded by restlessness and lassitude. The patient has various functional disturbances, such as dark spots, central scotomata, hemianopsia; sometimes a bar of light is seen.

The headache proper is a varying type in severity, usually located on one or the other side of the head; therefore, called hemiorania. It is not rare, however, to find it bilateral. Occasionally it is seen to be frontal, and sometimes patients complain of a sensation of a nail having been driven into the vertex. Just after its onset nausea and vomiting come on, which last from a few minutes to several hours. On the other hand, in some patients the prodromata are much more distressing than the headache itself. The interval between the attacks varies from three days to three weeks. Occasionally ophthalmoplegia externa has been noted.

Pathology. There is no known pathology. It is usually seen to be a psychic or sensory storm or, to use a common expression, the sensory equivalent to epilepsy. It is this that has led to the use of luminol treatment. There is pallor in the face, due to the sympathetic nervous disturbances. The pituitary may be at fault because in some cases a roofed-in sella turcica has been observed. French observers regard it as a form of anaphylaxis.

Diagnosis. Eye strain must be considered in every case of headache of this type as the symptoms may be cumulative in nature. Infection of the nasal sinuses must be considered. Brain tumor has often been diagnosed migraine, especially when it occurs before thirty-five. Cerebral syphilis is an important source of error. Renal insufficiency of various types must be considered and can be diagnosed by renal functional tests, blood pressure, et cetera. The ophthalmoscope must be used in every case. The differentiation of "biliousness" so-called from migraine must be considered. In migraine headache comes first, vomiting afterward; and in the various intestinal disturbances grouped under biliousness the vomiting comes first.

Treatment. The treatment is never curative, altho the number of attacks and their seriousness can often be very greatly ameliorated. The patient's habits of life must be looked into, particularly the hygiene of digestion and surroundings; his general health looked after; patients must not be allowed to lose sleep; of vital importance is the investigation of the presence or absence of constipation; eye strain often contributes; and not a few cases are the victims of focal infection.

The immediate treatment consists of luminol, as recommended by Moebius in his celebrated monograph. Three-fourths to one and one-half grains taken at night, especially if the patient is sleepless often prevents attacks and usually shortens them very materially, sometimes aborting them.

Fifteen grains of sodium salicylate taken months at a time, with a rest of several weeks between attacks often lessens them. Pituitary extract has been suggested but the speaker has had no experience in the same.

The diet should consist in cutting down of the carbohydrates. This was discovered by the speaker while treating a case of diabetes some years ago. In cutting down the carbohydrates, he discovered that the patient's migraine attacks disappeared. In an article on this subject by A. R. Brown, Journal of American Medical Association, several years ago, it was stated that a great many speakers called attention to the fact that overindulgence of candy often precipitated migraine attacks. There are a few cases in which the restriction of proteins is necessary.

Indurative Headache. Myalgia cervicalis or nuchal myalgia, a common type of headache, is grossly neglected by the general practitioner and often specialists. It is the type often helped by the osteopath in his manipulation and massage treatment. We should learn to cut away the ground of the osteopath by treating this type of case on a scientific basis. The headache is characterized by being located low down in the neck; is a dull, deep boring ache, often disturbing sleep, and is characteristically associated with sensitive points. These are temporarily improved by massage. It is the same type of disease as lumbago and analgous to pseudosciatica or myalgia of the buttocks.

All of these diseases are frequently associated with nodules which are sometimes palpable even between attacks. They are also felt during massage.

Treatment. Rest with massage given gently especially over the tender points. Ether can be used locally. Sometimes an injection of one-half per cent novocain, dissolved in normal saline solution, is given every three days. An injection of quinine urea hydrochloride into the nodules often gives relief, lasting from thirty-six hours to permanently.

These patients should avoid cold and wet. After the attacks the patient should be taught to harden the muscles.

THE STANDARDIZATION OF THE TREATMENT OF FRACTURES

Dr. Frederick J. Cotton, of Boston, spoke on this subject.

The standardization of fractures does not convey the idea of any restriction of therapeutic liberty or surgical treatment. It is simply the judgment as crystallized by the National Fracture Committee, self-appointed organization of orthopedic surgeons and fracture surgeons, growing out of war conditions. Certain generalizations are possible and there will be even greater, when the present work being done on the results obtained at American hospitals by the American College of Surgeons will be published.

The present fracture treatment is not good. This is the general opinion by all compensation boards in states where such organizations exist. The causes of the bad results are: (1) Employment of non-mechanical surgeons; (2) the work of these not well trained; (3) those out of training too long; (4) those employed who have adopted no standards of methods, and (5) have inadequate apparatus.

In a broader sense, the use of the word "standardization" means spreading knowledge of how things should be done.

The following types have been more or less standardized by crystallization of opinion.

The Shaft of the Femur. (1) Buck's extension which is still of great value. (2) The Thomas splint with traction is not a cure-all and one must beware of pressure sores, especially on the buttocks at the point where counterpressure for traction is made.

It is traction which produces length. The limit that can be put on the skin is about 50 lb. Any more than that is likely to destroy the underlying skin. Where there is shortening, it may be said absolutely that there has been failure of traction.

Plaster of Paris dressings should be abandoned, as these cover up all sorts of mistakes, chief of which is slipping of the fragments. Checking up on the fracture is important and must be repeated many times. This should be done by both the tape measure and x-ray.

Skeletal traction, that is to say, traction applied to the femur itself by ice tongs or modifications of the same is not always necessary. It is permissable, however, if other methods fail. There is also danger of either minor or major sepsis.

Open Operations on the Shaft of the Femur. Open operations, it is generally accepted, are not the best way of treating fractures. However, it may become necessary, if all other methods fail, particularly where there is (a) interposition of the soft parts preventing apposition; (b) where there is unsatisfactory traction, and (c) where the cases are late failures.

Method. The plate is the best method, taking it out at the end of a month if there is irritation.

Bands will be much more satisfactory if they do not interfere with callus. They always make a weak place in children; hence, the band must be taken out early.

Splints should be used after all operations for fixation purposes; the plates and bands produce position but not fixation.

Fractures of the Elbows. There is much contention on the question of the position in which these fractures should be put up. Some say flexion; some say extension. Both are indicated, depending upon which is the most likely to produce the satisfactory position.

Shoulder Fractures. The position nearly always needed is abduction of greater or less degree, usually greater, regardless of x-ray appearances of the fracture. Operations are not satisfactory except occasionally in cases of separation of the epiphysis.

Placing the patient in bed and traction by the John Murray apparatus is sometimes permissible, but it may cause nerve lesions; therefore, it is best to get the patient out of bed and into abduction splint as soon as possible, using particularly the aviation splint, the Terry splint and Mumm's triangle. The latter is particularly desirable because the arm can be brought down slowly. Occasionally it may be necessary to put the hand of the fractured arm on the opposite shoulder.

Fractures of the Ankle. These fractures produce worse disabilities than any other. There are three types; Pott's (or fracture by eversion); the fracture by inversion; and the Cotton fracture or fracture with posterior displacement.

The treatment of Pott's fracture is plaster after reduction. It is impossible to overreduce.

For the inverted fracture the treatment is the same. Again, it is impossible to overreduce. Therefore, it may even be put in a valgus position.

The Cotton fracture carries the foot forward and locks it in dorsal flexion.

In the after-care it is important to put double uprights in the shoes. It is needed in nearly every case; otherwise, the usual fracture after care.

Hip Fractures. There has been much controversy without conclusions, due to lack of statistics. Roughly, they may be divided into intracapsular and extracapsular.

No form of treatment gives perfect results. The best results are in the extracapsular cases which predominate; they are in the region of the trochanter. The reason is that there is better blood supply than in the intracapsular; in fact, they seem to unite with almost any treatment. Dr. Cotton says he knows of but two cases of non-union. However, one must look out, first, for mechanical difficulty of motion; and, second, coxa vara. The latter can be avoided by longitudinal plus lateral traction, the lateral pull overcoming the angulation. In making the lateral pull there is always danger of making too great pressure; second, it can be overcome by simple traction and abduction; and, third, it may be overcome by plaster in abduction. This needs x-ray to check up for buckling, etc. Time necessary from six to eight weeks and at the end of three months some weight bearing may be permitted. Function returns almost completely.

Intracapsular fractures are a very different story. The head is free or it is impacted. There is very little circulation in the head of the femur at the time these fractures are prone to occur, owing to the fact that the artery in the ligamentum teres is not sufficient to supply the blood. This leads to delay or even to nonunion.

In the impacted fracture we should accept the situation, if there is but slight deformity. If the impaction is accepted, use the fixation apparatus as indicated but avoid breaking up in making the examination. At the end of three to five weeks, a softening and absorption often occur, leading to solution of the impaction. If it is poorly handled at the time, nonunion is the result by giving away. This may be insidious in its appearance.

Baking and diathermia are of doubtful value; they may prevent some absorption of impaction; or possibly may increase the callus formation but this is not certain. These intracapsular fractures are always very slow in healing and must be kept off the weight for six months. One should never use traction; therefore, plaster is necessary.

There are three forms of plaster—Whitman's form, Moore's method with the leg abducted in the sitting patient and the short double spica in abduction. Bradford's ambulatory splint has not been proven of value as yet.

Correction of eversion has been much neglected but is an important point; hence, give them some internal rotation.

In nonimpaction the practice of producing artificial impaction, if necessary, has much in its favor. It gives some help and makes the result equal to those of impaction, when the artificial impaction is successful. This may be done with a hammer or by pressure. It is sometimes possible in old fractures to produce artificial impaction.

The operative treatment of fractures of the hips is a moot question. Very few seem to be made. Pegging and dowling have been of little value. Operative intervention in failure of union is, of course, justified. The choice of operation is based upon the nature and cause of nonunion and the mechanical conditions to overcome.

Dr. Cotton then showed many slides of various fractures illustrating his views.

SOME OF THE COMMON NEUROLOGIC SYMPTOMS

The next speaker was Dr. S. A. Kinnear Wilson, neurologist to King's College Hospital, London.

He gave, as the first example of inaccuracy in speech, the use of the words "neuritis" and "neurasthenia." They are used so carelessly that they may be considered a hodge podge of any number of other conditions.

He first took up neuritis and its essential symptoms briefly and diagnosed some of the things that are mistaken for it. Neuritis is a very common term in England, applied to any form of numbness or tingling, or both.

The questions that should be asked are: Where is the neuritis located? Is that all there is? Are all parts of the body involved? Are all parts equally invovled? And finally, is it distrubed anatomically correct? Does it run up and down along the course of the nerves? Does it vary with the weather? Is the local tenderness along the course of the nerves? If these questions can be answered satisfactorily, it may be accepted that we have a neuritis.

Confusions in Upper Extremities

Acroparesthesia is one of the most common conditions mistaken for neuritis. It occurs in old women, especially over forty, usually those who have worked much harder than the average. The proportion to men is 5 to 1. These patients have fingers slightly flexed and somewhat stiff; the pain is worse at night. The diagnosis is based upon the above criteria.

Pathology. It is an early arteriosclerosis of the vasa nervorum. The reason that it is worse at night is because the ischemia is especially marked, "when the tide of life is low" at night.

Reflex Neuralgia. This is the second condition commonly called neuritis. It is more common, 9 to 1, than neuritis; is characterized by radiating pains; reflexes are exaggerated and not diminished, as in a true neuritis. It may be said almost axiomatically that, when the arm jumps on tapping the tendons, the patient does not have neuritis.

Toxic Neuralgia. Is a rather vague entity and yet must be established. It is a very common condition. The mischief maker is not in the nervous system but is located in the bladder, in the intestine, gallbladder, tonsils, etc., in the form of an infection or toxic absorption, or possibly anywhere else in the body. Some of the conditions known as focal infection may belong to this type.

Cervical Ribs. Cervical rib is a condition which may often simulate neuritis. There are three ways of differentiating: First, a brachial neuritis in the young is rare; second, relief by raising the arm up to the head usually indicates cervical rib; third, the finding of the rib itself.

The sensory findings are on the radial side of the arm, due to pressure on the median nerve. The motor symptoms are especially important because of local atrophy of the thenar eminence, often mistaken for progressive muscular atrophy. X-ray should never be omitted in the diagnosis of these cases.

Dr. Wilson stated that he had noted a rather remarkably common association of occupational neurosis with cervical rib. Writers' cramps, telegraphers' cramps and similar conditions seem to be distinctly predisposed to by the cervical rib. He has no explanation for the fact.

Confusion in Lower Extremities

(1) **Tabes Dorsalis, Early.** The patient may in early tabes dorsalis complain of rheumatism, having a chronic ache without actual lightning pains in the typical form. The moral is always to examine the ankle jerks, if knee jerks are present. It is a most important detail and is often omitted. The Wassermann test will help.

(2) **Subacute Combined Degeneration of the Cord.** A condition often mistaken for neuritis. Briefly, this disease is a pernicious anemia with cord symptoms preceding or predominating over the blood findings. Often all of the symptoms are very slight.

(3) **Disseminated Sclerosis.** Contrary to the teaching of the textbooks, this disease may be associated with pain, and should be thought of in any case of neuritis that is unusual in its manifestations.

Dr. Wilson then took up the diseases mistaken for neurasthenia.

(1) **General Paralysis of the Insane,** more often called paresis in America, or general paresis.

In the early states there are several rather peculiar findings that led Dr. Wilson to suspect paresis. Typical example is when a man and wife enter the consulting room and Dr. Wilson asks, "What is wrong?" He finds the husband looking helplessly at his wife and he believes he sees in that the first subtle symptom of the disease—a helplessness. There is also a peculiar silence and apathy in these patients. A well developed general paralysis is not mistaken for neurasthenia.

(2) **Early Paralysis Agitans** is often mistaken for neurasthenia, largely because of the depressed appearance and peculiar facial expression which should be detected by the absence of the usual frequency of blinking which is usually the earliest phenomenon of all.

(3) **Myasthenia Gravis** is a very rare disease but should be recognized by fatigability, the dropping of eyelids and the sagging of the eyelashes.

(4) **Suprenal Asthenia** (Byram Bramwell). There are certain functional disturbances of the adrenal gland that may be mistaken for a short time for neurasthenia. However, they disappear usually quite quickly.

(5) **Addison's Disease** may be mistaken for neurasthenia.

Pseudoangina (vasovagal attack of Gowers). These may be regarded as lower level equivalent of epilepsy. The attack is usually described by the patient as a sensation of a peculiar feeling in the stomach, thumping of heart, faintness, choking; the extremities feel hot or cold covered with perspiration and a feeling of impending death. The location of the disturbance may be in the medulla, in the vagus center or there may be a repression of the centers of diseased organs of distribution and there may be a disturbance in the cortex which may be regarded as a true anxiety neurosis.

THROAT INFECTIONS IN CHILDREN

The next speaker, Dr. Joseph Brenneman, of Chicago, read this clinical paper.

This paper was a very lengthy, detailed description on manifestations of throat infections and of all the complications as they had occurred in his experience. He was particularly impressed with the frequent incidents, the virulence of the type of infection, the wide spread morbidity and the great mortality. He thinks the best name for this disease is the term "nonspecific throat infection." Grippe is not good.

2 P. M.

The next speaker, Sir John Thompson Walker, was introduced by Dr. Alexander Monro, presiding for Dr. B. D. Gillies.

THE RELATIONSHIP OF CALCIFIED ABDOMINAL GLANDS TO URINARY SURGERY

The clinical symptoms and diagnósis of calcified glands are obscure. They are the late results of tabes mesenterica, which often had not been diagnosed in the acute stage and is much less likely to be diagnosed during the residual stage.

The symptoms during the residual stage are pain, difficult to localize. Diagnostically, there was a dull pain in four cases, acute pain in fourteen, moderate in seven. Duration is from a few minutes to hours; is noncolicky in character to a severe pain. There was a moderate renal pain in character in a few of these cases. Vomiting was present in some. There was no retraction of the testicle. There was a tender spot sharply circumscribed in four cases. The gland was palpable once.

The remarkable feature of calcified abdominal glands is that it is often associated with hematuria. It was present in six of the speaker's cases. It was severe and intermittent for six years in one case which disappeared after the gland was out.

Hematuria is caused by the proximity of the gland to the ureter. The gland may impact the passage of the ureteral catheter by pressure and may thus be mistaken for a stone obstructing the ureters.

In the x-ray diagnosis must be considered kidney stones, gallstones, and ureteral stones. In these pictures the kidney outline should be shown. One of the most important diagnostic points is that the kidney lies parallel with the outer border of the psoas muscle and in contact with it. The gallbladder is always separated from the psoas muscle by a definite interspace and its longitudinal axis is more horizontal than that of the kidney and is, of course, therefore not parallel with the psoas muscle. Finally, the shadows outside the kidney zone might be either ureteral stones or calcified glands. The largest shadows are usually due to gallbladder. If they are oval or round, they are either gallbladder or kidney; if the stones are wedge or branch shaped, they are always kidney stones.

Density of the Stones. In the gallbladder they are less dense than in the kidney. The calcified glands stand between the two in density. Flat stones may appear rarefied. Gallstones are the only ones that show concentric layers. Where there are groups of stones, the number in the kidney is usually somewhat less than in the gallbladder and their diagnosis can be made according to the shape and arrangement of the stones to each other.

Stereoscopic plates, contrary to general opinion, do not help much. Lateral radiography and pyelography have produced very definite results. In this sort of picture the shadows of the kidney or calyx is superimposed by the second lumbar vertebra; the gallstones lie on front of the spine; a gland is usually somewhat forward from the spine and easily distinguished but it may be superimposed by the vertebrae.

Treatment. Treatment is removal of the glands surgically.

Dr. Walker then illustrated his lecture with many beautiful pictures of various types of stones, demonstrating the coexistence of gallstones and kidney stones, the coexistence of gallstones and calcified glands. He also showed a remarkable picture of a dermoid cyst, containing teeth which might easily be mistaken for kidney stones.

THE FLOW OF STRUCTURE WITH AGE AND DISEASE

The next speaker was Professor Horst Oertel, of McGill University.

He mentioned particularly the appearance of age in individuals that we see in glancing at people around us and immediately forming an approximation of the age of the individual by his appearance. He discussed the circulation of the heart in infancy, childhood, youth and in senility, and the reconstruction of the kidney after disease, in old age and after arterisclerosis.

He showed lantern slides of x-ray pictures of the kidneys that had been infected, illustrating marked differences of kidneys in arterisclerosis and in nephritis. In the arteriosclerotic there is a lessening of the arterial tree in general, while in the nephritic there is lessening of the cortical circulation. He closed by emphasizing the importance and dependency of function upon structure.

CARDIORENAL VASCULAR DISEASES

Dr. L. G. Rowntree, of Mayo Clinic, was then introduced and gave this paper.

He gave it as an informal discussion, taking up water intoxication as treatment and touching on calcium metabolism.

8:15 P. M.

Evening session was opened by Dr. E. A. Sommer in the chair.

PHYSIOLOGY OF THE ARREST OF HEMORRHAGE

Dr. John Tait, Professor of Physiology at McGill University, gave a lantern slide lecture on this subject. He dwelt at great length upon the parts played respectively by the platelets and coagulation in the arrest of hemorrhage.

DISEASES OF THE RIGHT ILIAC FOSSA

Dr. F. N. G. Starr, of University of Toronto, was the last speaker of the evening.

While he is a believer in operative surgery for surgical conditions, he thinks more consideration should be given to the diagnosis of chronic fibrous appendicitis. All too quickly is the diagnosis made without giving consideration to other possibilities. Such cases, as the result of incorrect diagnoses, are often made worse by the removal of the appendix. He recommends dietary and other treatment for these.

He divides the groups into four types of cases: (1) the mobile, atonic cecum, which is abdominal. This is the herbivorous type of animal; hence these patients should not be given meat. Usually they get along well if the meat is cut down very materially. Yeast is often added to change the fluid in the intestinal canal. Flaxseed may be used. Eighty per cent of these patients do well, if they wear some sort of a corset to support the cecum. (2) Patients failing to be cured by removal of this type should have the appendix removed. (3) Cases failing to recover on this condition with the cecum in the pelvis should have the appendix removed, the cecum placated and lifted up. (4) This group are those who require removal of the cecum and colon.

Friday, June 27, 8:30 A. M.

A NEUROLOGIC CLINIC

Session was opened by this clinic by Dr. S. A. Kinnear Wilson.

Involuntary Movements and Spasticity. He believed this condition to be due to:

(a) Natal and antenatal influences. (1) Infection, (2) trauma plus asphyxia, (3) hemorrhagic disease of the newborn.

(b) Postnatal influences, which are nearly all due to encephalitis. A case in point that was presented was a woman with athetoid movements and spastic extremities. Diagnosis: probably hemorrhagic disease of the newborn.

Paraplegia with Spasticity. The second case presented this condition. The knee jerks were four plus. Babinski was present. There was a marked scoliosis which had been present in the left leg for two and a half years and had begun to involve the left arm for two years. It was also present in the right leg for six weeks and in the bladder for three weeks. Right arm reflexes were brisk, left arm absent.

Analysis: This was a three-quarter lesion; it was progressive, chiefly motor in distribution; cranial nerves not affected.

Pathologic diagnosis. The following diseases must be considered:

(1) Syphilis of the spinal cord. Probably not, because Wassermann was negative and the spinal fluid was normal.

(2) Compression of the cord—most likely. Either due to tumor or to disease of the vertebrae. X-ray had not been made of the vertebrae. Double spinal puncture, introducing iodide into the canal and observing by x-ray the extent of percolation.

(3) A degenerative disease of the spinal cord—amyotrophic lateral sclerosis or progressive muscular atrophy.

(4) As a possibility, syringomyelia must be considered.

Postencephalitic Parkinson Syndrome. The third case presented was a patient with this condition without tremor. Patient was in a position of flexion. It might be possible to do some good in this case by eliminating the increased tone; by cutting the sympathetic nerves, described by Hunter and Royal, of Australia. They cut the grey rami going from the ganglion to the plexus, thus relieving spasticity.

Paralysis Agitans. The fourth patient presented this condition.

The fifth case was a child. (1) "Arriere," (2) hypotonic, (3) walks with wide base, (4) knee jerks present, (5) plantar response to reflex.

We must consider: (1) Slight cretinism in a so-called cretinoid child, (2) atonic diplegia (described by Forster, of Breslon), (3) subthyroidism and diplegia, a rare combination not yet exactly placed in the classification of nervous diseases.

Progressive Muscular Atrophy. The sixth patient presented was of this character, of the facio-orbicular-scapulo-humeral type.

THE PATHOLOGY, DIAGNOSIS AND TREATMENT OF GALLSTONE DISEASES

Dr. L. J. Austin, of Queen's University, Kingston, spoke on this subject. He gave the following classification of the types of stone: (1) Biliverdin dust (occurs in bladder and ducts), (2) salitary oval stone (cholesterin), (3) multiple faceted stone (biliverdin calcium and cholesterin), (4) the barrel stone (biliverdin calcium and cholesterin in alternate layers).

Gallbladder changes due to stone and gallbladder changes due to inflammation of the gallbladder itself often can not be distinguished. However, the thickening of the gallbladder and fibrous contraction are usually regarded as due to stone rather than to the original inflammation.

The symptoms of gallstones are: (1) Flatulent dyspepsia coming on early after the meals. It is not unusual for it to come on the left side. Some relief by gas eructions. (2) Seldom vomit, but always have relief if so. (3) Often are preceded for years by minor digestive disorders, often called biliousness. (4) They have pain under the tip of the right scapula in Head's zone.

In no case should a diagnosis be delayed until some catastrophic complication occurs and makes the diagnosis clear.

Aids to Diagnosis. X-ray examination helps in from fifteen to twenty per cent of the cases, according to Dr. Austin. Some writers give as high as sixty per cent. Another method is to x-ray after distension of the abdomen by gas. Stomach contents are of no value.

The Lyon-Meltzer method of duodenal aspiration is of no value.

Diagnosis of Obstructive Jaundice. (1) Gallstones impacted, (2) carcinoma head of the pancreas, (3) carcinoma of the gallbladder, (4) fibrous contraction of the common duct, (5) carcinoma of the ducts at the ampulla.

The last two are seldom mentioned. The obstruction by growth usually leads to the dark green type of jaundice.

Courvoisier's law may be enunciated as follows: Obstructive jaundice plus palpable tumor in the gallbladder region is never due to stone but to carcinoma.

The question of whether cholestectomy or cholestostomy should be performed resolves itself into the following: Cystostomy for pus always; for stones alone cholecystectomy always.

DISEASES OF THE PITUITARY AND THE ADRENAL GLANDS

Dr. L. G. Rowntree, of Mayo Clinic, presented this paper. He limited his subject specifically to diabetes insipidus and Addison's disease.

Diabetes Inspididus. Diabetes insipidus is difficult of diagnosis in some cases. The following must be considered: (1) Chronic interstitial nephritis with lowered specific gravity or urine in large quantities. (2) Infections of the lower urinary tract with frequent urination. (3) Polycystic kidney. (4) Syphilis, which must be regarded as a cause of diabetes inspidius in some cases.

Treatment consists of giving surgical pituitrin. Occasionally spinal puncture cures a case. In the cases due to syphilis antiluetic treatment should be tried but so far no cases have been benefited. Surgery is indicated only when there are definite signs of tumor.

Addison's Disease. A new medical interest was injected into the subject of Addison's disease, when Dr. Muirhead, of the University of Nebraska, who was suffering from the disease, undertook the management of his own case under Dr. Rowntree's direction. Remarkable results were obtained, the regimen consisting essentially of adrenal gland by mouth and epinephrin by hypodermic injection.

Of the cases Dr. Rowntree has seen all but one have been tuberculosis. Syphilis can cause it. Tumor is said to be a cause and in some cases adrenal insufficiency of considerable degree was produced by influenza, possibly temporary in character. The need for earlier recognition is very important and recognized by all medical men.

The differential diagnosis is from other pigmented diseases, chief of which is hemachromatosis, (a) with glycosuria, (b) without glycosuria.

The essentials in the direct diagnosis are: Pin point jet black spots in various parts of the body, nearly white spots elsewhere, ridges on the nails of both fingers and toes, patches of brown pigmentation in the mucous membrane of the mouth and cheeks, emaciation of considerable degree, profound weakness, gastrointestinal symptoms, extremely low blood pressure.

Prognosis is absolutely bad. Average duration is one and a half years. The longest case known is six years, reported by DeLand.

It is often associated with poor renal function, especially in the dilution test; blood sugar is low, sometimes as low as in insulin shock. Gastric contents usually show achlorhydria.

Treatment. Organic therapy, rest. Soporifics for the insomnia are necessary. Heat should be applied both externally and by drinks. Fresh air. Sunshine. All the reassurances that can be given them.

THE PUERPERAL UTERUS AND ITS INFECTIONS

Dr. W. W. Chipman, gynecologist from McGill University, discussed this.

Five deaths per thousand labors are the very best figures that can be attained by American obstetricians. Three of these are due to puerperal sepsis. Two important dicta should be remembered: (1) Do not leave secunda; (2) all saprophytic infections are potentially pathogenic.

Prophylaxis During Pregnancy. During the last two weeks of pregnancy the following should be borne in mind; Cleanliness comes before godliness. Baths should never be taken in recumbent position. Sexual intercourse should not be indulged in. Keep away from anyone suffering from bacterial disease, even your own child.

At the time of delivery prophylaxis includes: The use of a mask and gloves, good technic, no digital examinations, a minimum of interference—the ideal labor being spontaneous.

During the third state: "Thou shalt not hurry." Leave any slight pieces of placenta in the uterus but remove those from the vagina. Repair all cervical tears a half an inch deep. Repair all tears in the perineum and vagina.

These constitute the ounce of prevention. The pound of treatment is not nearly so proficient. Bear in mind the following: There should be no trauma inflicted to increase opportunities for the entrance of bacteria. It requires great judgment to decide the question, "To enter or not to enter." It is a growing opinion to stay out as much as possible.

Dr. Chipman's treatment in his own cases: No douche or curette used in treatment. Never break down reaction zones. Feed the patient; force fluids; see that they get sleep, plenty of fresh air and give alcohol support.

More virulent infections: Increase the resistance by giving serum of the polyvalent streptococci. Nonspecific antigens. Vaccines are worthless.

The serum is given as follows: A large dose, 90 to 100 c.c., distributed in three places should be given early, using the polyvalent streptococcus serum. Of the nonspecific antigens, collargol, proteins, gold salts, etc., have been used. None are specific. Mercurchrome and other dyes may be used intravenously. The Chipman's technic is to give antistreptococcic serum and quinine, 30 c.c. of the serum daily by hypo for three days; quinine bihydorchloride intramuscularly three times per day.

INVOLUNTARY MOVEMENTS

Dr. S. A. Kinnear Wilson discussed this subject. He limited his discussion to (1) chorea, (2) athetosis, (3) tremor and (4) bradikinesis.

Explanation and description of choreiform movements is really not possible. In a general way it may be said that all movements are due to inervation, that is to say, that destructive lesion can never cause kinetic movements of any kind. The various forms of chorea and choreiform movements are much like voluntary movements; they look purposefull, therefore their origin is far up, probably in the cortex, and not in the corpus striatum as the textbooks tell us. They are a sudden rapid response to command, unknown anywhere else in neurology. There is a slight hyperextension of the phalanges on one hand which has been called the nervous hand, while in distinction chorea usually has flexion at the wrist.

Athetosis was first described by an American, Hammond, in 1876, as with slow, sinuous movements, irregular in rhythm; purposeless and not resembling normal movements. Tremor, on the other hand, differs. There are successions of similar movements or regular movements. Bradikinesis is often postencephalitic with a torsion spasm.

All involuntary movements are of the motor system. Horseley removed the motor area of the arm, thereby curing an athetosis. This was done in 1909 and demonstrates at least a cortical relation in the development of athetoid movements.

PHYSICAL EXAMINATION

Dr. George S. Young gave a detailed description of the making of a physical examination. He presented nothing particularly new but simply made a plea for system and thoroness, including the preparation of the patient; careful consideration that should be given the various systems in order that nothing may be omitted. All examinations should be made with proper exposure of the patient.

INDICATION FOR OPERATION IN HEAD INJURIES AND THE AFTER RESULTS OF SKULL OPERATIONS

This paper was presented by Dr. L. J. Austin.

Skull fractures are of two principal types: (1)

fissure fractures, usually involving both the base and the vault, (2) compressed fractures. Early diagnosis of compression is important in order to preserve life in the severe cases and to prevent permanent brain injury in the milder cases.

Patients in profound shock should be put in bed, but if shock is not profound, x-ray pictures should be taken immediately. If compressed fracture presents, operation should be done as soon as possible. If there is no depression, patient should be returned to bed to determine brain injuries.

Diagnosis of Compression: (1) Hourly blood pressure and pulse should be taken. Increase in the former and decrease in the latter indicates hemorrhage. (2) Ophthalmoscopic examination. Dilatation of the veins as they cross the disc and a blurring of the disc speaks for compression as against trauma. (3) Increase in cerebrospinal pressure important. Patient should be flat, head not raised. A rise of twelve millimeters in adults or eight millimeters in a child speaks for hemorrhage. The presence of blood does not necessarily indicate hemorrhage. There is great danger of removing too much cerebrospinal fluid. Twenty cubic centimeters should be the limit and Sharp states that not more than ten should be removed.

Treatment: Fissure fractures, 70 per cent recover without treatment. In decompression fragments must be raised. In intramural pressure the dura must be opened and drained. Dr. Austin uses a longitudinal incision instead of the usual flap.

After Effects of Skull Injuries: (1) Jacksonian epilepsy. Cases are usually not clear cut and in the majority of cases develop a true epilepsy. After twelve attacks operative procedure is futile. Medical results possibly a little better. (2) Pulsating scar requires treatment only when patients are conscious of the pulsation. Beat treated by inserting bone graft.

Professor S. Lyle Cummins, who was to speak on "Clinical Types in Tuberculosis with Relation to Age and Sex," did not appear because of his illness in a London hospital.

ECTOPIC GESTATION

Dr. W. W. Chipman spoke on this subject. Of 1712 laporatomies performed by Dr. Chipman, 107 were for ectopic gestation. It was recognized originally by Lawson Tate, of Birmingham in 1883, and it was he who brought it into surgery. It occurs in two types of abnormal tubes: (1) Those damaged by gonorrhea or the tubercle bacillus, (2) in anaplastic tubes, patients who have suffered from bad hygiene, poor food, etc.

There are two types of cases, one that is bleeding a little bit at times, called the "leaker." These were 72 or his 107 cases. The cataclysmic cases were 30; six additional cases were in the isthmus.

Diagnosis: An early diagnosis is important before a large hemorrhage has occurred for it is very easy then; in the leaker it is difficult. Occasionally Dr. Chipman says he makes colpotomy for diagnosis.

Of his 107 cases, in 64 there was no history of amenorrhea; 93 had tearing, knife-like pains; 49 fainting or collapse; in 14 there was no pain whatever. Stranguary and tenesmus are frequent symptoms. One hundred had small irregular uterine hemorrhage; 7 had no uterine bleeding whatever. One of these had a coexisting uterine pregnancy; one was operated on before bleeding occurred.

Decidual casts by which diagnosis can be made are rare.

Differential Diagnosis is sometimes very difficult. It must be differentiated (1) from the various acute anemias. (2) Early uterine abortion is made on the feeling of the cervix and the character of the pain. (3) Incarcerated, retroverted uterus is recognized by rectal examination; mesial position of the mass and bladder retention. (4) Acute appendicitis. (5) Twisting of the pedicle of an ovarian cyst; no free blood, no collapse. (6) Acute salpingitis by the evidence of gonorrheal infection, granular vaginitis, fixed uterus and blood count.

Treatment: Open early, irrespective of the patient's condition. Danger of subsequent infections very great.

Mortality: Six of his 107 cases died; two from pneumonia on the tenth day and four from peritonitis.

Among his 107 cases he has had some rare conditions. One was a three-weeks tubal pregnancy, the earliest known diagnosis. He had a case of intramural rupture. One had a simultaneous intrauterine pregnancy which went to term after removal of the tubal pregnancy. In one was intraligamentous rupture, going to the sixth month and to operation without difficulty. One presented successive ectopic pregnancy, first in one tube, then in the other. There was another similar case.

Saturday, June 28, 8:30 A. M.

GOITER AND ITS MEDICAL TREATMENT

Dr. George S. Young gave an address on this subject. He divided goiter into the classes usually recognized, namely, adolescent goiter, simple adenoma, toxic adenoma and exophthalmic goiter.

Adolescent goiter requires no treatment except the use of iodine. It may, however, merge into a permanent goiter (diffuse colloid goiter) from the lack of available iodine. Small, hyperplastic areas are sometimes seen in these glands and these may be the nucleus of hyperplastic toxic goiters later on.

Contamination of water supply does produce goiter in man and in fish. Just what the nature of this contamination is, of course, is not certain, but the probabilities are that it is lack of available iodine. Goiter in the different parts of the world varies.

Iodine may be present but not available because of the nature of its combination or bacteria may not hold it in combination. Ancient Chinese recognized the necessity for iodine in treating goiter and gave the ash of seaweed.

Dr. Young referred to the work of Marine and Kimball in the prophylaxis of goiter in children. In one thousand who were given iodine in prophylactic doses there was a decrease of 773 goiters; in one thousand without iodine there was a decrease of only 117; or only one-sixth as many as with iodine. In 4500 children with no goiter they gave no iodine to 2305 for a period of two and a half years, and gave iodine to 2190 in the same period. At the end of this period 495 of those who did not have iodine developed goiters, while only five had goiters among those who had been treated with iodine. If we do our duty toward school children, goiter can be swept away entirely. The method of giving it is sodium iodide, gr. i, three times per day for ten days twice per year. As a matter of fact, this is the duty of the state but until various objections can be cleared away it is the duty of physicians. It should be used in pregnant mothers with goiter to prevent myxedema in the children. He mentioned Kendall's research on thyroxin and also referred to basal metabolism as a means of studying these diseases.

Exophthalmic goiter is the hyperplastic type. The cause is not known definitely; it certainly is not initiated within the gland itself. It usually follows some nervous shock; the influences stimulating the glands come thru the nerves, probably the sympathetic. He called attention to Cannon's experiment. It has been more common after infectious epidemics, such as influenza.

Treatment of exophthalmic goiter is essentially surgical. Medical treatment should not be tried too long. On the other hand, surgeons claim too much and neglect the medical treatment afterward. Medical treatment consists of rest of mind and body; some recover. Surgery, however, cures more than does medicine.

The details of medical treatment are: (1) Rest, (2) adequate diet calorically, (3) diet low in protein because metabolism is stimulated by protein diet, (4) Focal infection should be cleaned up on general principles. (5) Quinine hydrobromide helps. (6) Sleep must be induced if the patient is restless. (7) Psychotherapy by calming the mind and reassurance from both the doctor and nurse; relief from household duties; quiet domestic relations. Some cases of hyperthyroidism are produced by physiologic drive of responsible conditions or occasionally by emotional drive.

Toxic adenoma has recently been separated from exophthalmic. A clear point of distinction is that there is no exophthalmus in these cases. The difference between the two is that one, the exophthalmic, is due to distorted secretion with excess; the other is an excess pure and simple. The difference between the two: the toxic adenoma contains nodules in the gland; there is no exophthalmus. It takes it from fourteen to fifteen years to develop fully; usually comes on after forty and there is some hypertension. It is always cured by surgical treatment. However, the myocardium becomes quickly involved because the patient is usually over forty. The exophthalmic goiter has no nodules; has a marked exophthalmus; the onset is sudden usually, altho it may take a few months for it to develop but never the long period of years that occur in toxic adenoma, and it nearly always comes before forty. The diastolic pressure does not rise commensurate with the systolic. The cure in these cases is only relative. Lugol's solution may be used in exophthalmic goiter as a help to carry patients thru crises for ten or twelve days. Longer than that it is of no great value.

ADOLESCENT DYSMENORRHEA

Dr. W. W. Chipman gave a brief resume of the causes of this condition, stating that 29 per cent of all women are disabled for a day or more during the menstrual period. The paper presented nothing particularly new but stated the subject in a pleasing and interesting manner.

OSTEOMYELITIS

Dr. F. J. Cotton gave an instructive address on this topic. Typical cases of osteomyelitis are easily recognized but the very acute, severe cases are often overlooked because the severity of the constitutional symptoms attract the attention away from the bone. X-ray is of very little value in early diagnosis. Subacute cases are more common but often are diagnosed as rheumatism or arthritis because of the proximity of the disease process to the joints. Acute cases often give total necrosis of the shaft if not diagnosed early. Subacute are less dangerous in these respects. With early or relatively early diagnosis and drainage necrosis does not occur. It is a type which might be called the "wandering" type of osteomyelitis, which goes from one bone to another. This is characterized by very little or no necrosis.

The late complications of osteomyelitis are sinuses and recurrent bone abscesses, occurring sometimes for years after the acute attack. They do not have definite walling off; there is no x-ray evidence of these abscesses. The findings are clinically pain, tenderness, well-localized; often no fever whatever. The pus is sometimes very deep in the bone. After operation it is difficult to differentiate between the changes due to destruction and repair.

The organism causing osteomyelitis is usually the staphylococcus aureus. The streptococcus and staphylococcus albus are rare as causes.

The Treatment of Extensive Osteomyelitis. Immediate: Drainage must be adequate.

Later treatment: Wait for development of the bone involucra; then remove the sequestrum. Advantages: It assures reproduction of the entire shaft.

After treatment: (1) Dakin's solution. Disadvantage—patient must be bedridden for such a long time. (2) Wax good for cases seen early. Disinfect with carbolic acid, curette, flush with alcohol; apply the wax. The wax protects from infection.

Joint Complications of Osteomyelitis: Joints are often infected. (1) Tap. (2) If not successful, wash out joint with 1 to 1500 bichloride solution for 15 minutes. (3) Do not drain. (4) Close tightly.

Sinuses. These usually lead to eburnated bone. **Treatment:** (1) Beck's paste is sometimes successful. (2) Excessive bone removal, and (a) wax, (b) graft. Repair of osteomyelitis is from bone and not from periosteum.

Brodies' Abscess: This is a walled-off abscessed cavity following osteomyelitis. Symptoms are dull, aching pain, coming on at night or after exertion.

Treatment: Clean out and use wax technic. Organisms in Brodies' abscess usually are (1) staphylococcus aureus, (2) typhoid. Tuberculosis is not called Brodie' abscess.

There is a class of reactionary processes in bone which may be due to low grade infections or trauma with hemorrhage, in which destructive and reparative processes are going on at the same time. Giant cells are present. Osteitis fibrosa belongs to this group. It closely resembles Paget's disease. I believe they are essentially reactionary to infection and to trauma. I believe that the giant cell tumors, cysts, osteitis fibrosa and Paget's disease are all closely related. True giant cell sarcoma exists but is not the usual cell tumor of bone, which is probably inflammatory in nature.

1:30 P. M.

PSYCHOTHERAPY FROM THE STANDPOINT OF THE GENERAL PRACTITIONER

Dr. Charles Hunter discussed this subject. He expressed himself as believing there is too much materialism in medicine. We are blind in the psychic eye. Medicine has very great difficulty in accepting psychotherapy. The time is here for us to take from the charlatan the psychotherapy which he is practicing and thus overcome his unwarranted competition. We must avoid suggesting symptoms to neurotic individuals who are subject to suggestions. Avoid such expressions as "weak lungs" "heart disease," "pleurisy," "neuritis" and similar expressions. More suffering occurs from an error in diagnosis than in omission in the diagnosis of disease occasionally.

Some of the important diagnoses that must be made are to differentiate a simple fainting or syncopal attack from heart disease. Petit mal must be recognized and it is important in making a positive diagnosis of petit mal to differentiate fainting. Catarrh often suggests to the patient tuberculosis. Perhaps one of the most important factors of all in this management from the psychotherapeutic standpoint is the oversight of a neurosis which has been implanted upon some organic disease. This fraction of the disorder is treated by christian science and often gives more relief than relief from the underlying organic disease.

One of the great dangers in the treatment of hypertension is the fear that is implanted into the patient by calling his attention to the fact that he has a high blood pressure. Physicians seem to exaggerate the importance of minor elevation of blood pressure and make unwarranted bad prognoses. To speak of "hardening of the arteries" is similarly a fear-instilling diagnosis.

Albuminuria of the orthostatic type is frequently interpreted to the patient as the beginning of a nephritis. Orthostatic albuminuria should be sought out in every case where the presence of albumin as a symptom of nephritis is not supported by other findings. A little effort will bring this out. Enteroptoses are found in neurasthenic individuals fundamentally and they do badly on operation.

LIVER FUNCTIONAL TESTS

Dr. L. G. Rowntree gave an historical discussion on these various tests. He mentioned the French school which adopted various tests of glycogenic function, following Claude Bernard's discovery of the same. Strauss in 1901 used levulose; Bauer in 1911 used lactose. Neither have been very satisfactory. Rowntree's adoption of tetrachlorphthalein, intravenously administered, is of considerable value because the excretion is by way of the liver. The factor of safety in the use of this chemical is very great. It works to a disadvantage because it does not have striking results, unless there are marked pathologic changes in the liver.

There are a variety of tests based upon catching of these liver excretions from the duodenum by the duodenal bucket, particularly those of McNeil.

Rosenthal, a fellow of the Rockefeller Institute, has used dyes intravenously and studied their retention rather than excretion. Probably this is the crux of the situation and will work out best to test the function of the liver. It is not yet perfected, however. It will probably be ten years before something satisfactory is worked out.

THE RELATION OF THE PANCREAS TO DIABETES

Dr. Horst Oertel presented this paper. The author did not take up the usual discussion of the relations of the islands of Langerhans to diabetes but rather of the pancreas as a whole. He believes the islands of Langerhans are not glandular structure independent of the rest of the pancreas, but they represent young pancreatic tissue which soon becomes adult tissue and disappears, and others spring up somewhere else. They are evanescent, embryonic pancreatic tissue. The reason for their absence in diabetes is clear when one considers that the pancreas of a diabetic does not regenerate well; therefore, the embryonic structure, the island of Langerhans, does not appear.

PUBLIC HEALTH LEAGUES

WASHINGTON

ANNUAL MEETING OF LEAGUE

The fourth annual convention of the Public Health League of Wahsington, held August 13, was well attended and considerable enthusiasm was shown at a recital of its accomplishments, as presented by Dr. H. J. Whitacre, retiring president. "The most constructive work ever done by the medical profession in the State of Washington," stated Dr. Whitacre, was the organization and maintenance of the League. He emphasized the importance to the physicians and health forces in general in this state of the League's affiliation with the dentists, nurses, dietitians and pharmacists, and the formation of the general or "lay" bureau, which will be headed by Dr. Suzzalo, President of the University of Washington, who has always been interested in and appreciative of all that scientific medicine has meant to humanity. Dr. Whitacre extended, on behalf of the League's officers, appreciation to those physicians who had consistently supported the League from its inception and said it was of vital importance that the men who had not become members, but who were sharing in the benefits accruing to the whole profession by reason of its work, be brought into active membership and participation, that the burden, financial and otherwise, be made lighter for those who had demonstrated their willingness to make possible this vital force.

"We have a record of very definite accomplishments and hope for an even better record in the future," asserted Dr. Young, who for the past two years has been Chairman of the Executive Committee, and he took occasion to reiterate what had already been said regarding the necessity for a 100 per cent representation in the League on the part of the Washington physicians.

The problems to be solved at the approaching session of the legislature would require close and intelligent attention, Dr. Young pointed out, stating that Mr. Jones would be in Olympia during the entire session, and urging careful scrutiny of the records of the various candidates and the election of those known to be sound and conservative in health policies, which would do much toward insuring the success of the League in its legislative program.

At the meeting of the Board of Trustees, following the general meeting, the following officers were elected to serve for the coming year:

E. Weldon Young, M.D., Seattle, President; George A. Dowling, M.D., Seattle, Vice-President 1st district; W. D. Kirkpatrick, M.D., Bellingham, Vice-President 2nd district; H. W. Partlow, M.D., Olympia, Vice-President 3rd district; F. H. Brush, M.D., Yakima, Vice-President 4th district; Mitchell Langworthy, M.D., Spokane, Vice-President. 5th district; Frank S. Bourns, M.D., Seattle, Secretary-Treasurer.

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OREGON

The September issue of The League Bulletin has the following to say relative to the Workmen's Compensation Amendment to be voted on at the November general election in Oregon:

The proposed "compulsory workmen's compensation law amendment," which will be submitted to the voters at the November election, is of far-reaching importance. The bill has some good features which ordinarily would elicit support, but a careful study of the amendment and of the position taken by those who are sponsoring it reveals dangers that more than offset any good.

It seems apparent that this amendment, if it should be adopted, would become the entering wedge for state medicine. Up to this time the workmen's compensation law has been limited to industrial accident cases, but in this bill the words "disease" and "health" are used in such manner that it is very uncertain just how far-reaching the new law would be. The amendment says: "On the demand of an injured employee, or his legal representatives, the industrial accident commission shall investigate, hear and determine whether or not the injury, death or disease was caused by the failure of the employer to install and maintain in use any safety appliance, or to obey any law or any rule of the commission for the protection of the lives, safety and health of employees." An interpretation of what those who initiated the measure have in mind is given in their official argument in the election pamphlet, when they say: "Passage of this amendment will declare the social concept to be that compensation for work accidents, adequate medical and surgical service, and vocational rehabilitation is peculiarly a function of the state and not a business for private profit." Just how far do they expect to go in establishing a state system of medical and surgical service? That is a question to which it behooves the medical men of this state to give some thought. The amendment gives the members of the Industrial Accident Commission such autocratic powers that they can probably go as far as they like. Even the power of the legislature to amend any ruling of the Commission is taken away. The Commission is given absolute authority to make all premium rates, all rules and regulations, and is given absolute control over all medical service and fee schedules. The spirit of the amendment seems to contemplate a system of state doctors and hospitals.

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HOSPITAL STANDARDIZATION

Edited by HERBERT E. COE, M.D.

END-RESULTS

At the hospital conference of the recent sectional meeting of the American College of Surgeons, three papers were given upon end-results in three separate lines of work. This is interesting. The fact that within four or five years after a movement for good records has been started we may even begin to use them for an analytical study of a certain type of case is very encouraging. Such a study would have been absolutely impossible in this section of the country a few years ago.

In the last analysis the end-result is the ultimate object of treatment. The immediate object, of course, is in many cases the quickest possible relief of the condition for which the patient consults the physician, but if the condition recurs and the result of treatment is only temporary relief, our work is of little value. The end-result of such treatment is dissatisfaction, disrepute for the medical profession, and the production of fertile ground for the cults. The focusing of our attention upon end-results is a most valuable step in medical progress. It broadens our horizon, gives us occasion to stop and take stock, shows us the broad general lines along which we are progressing, indicates our trends, and supplies us with most valuable data in working out the problems which face our profession today.

With definite information available upon general end-results for the medical profession of an entire district, we automatically set a standard to which all others who attempt to treat disease must come. Such a procedure if given proper publicity will cause the general public to demand a similar study and report by those whose extravagant claims are now too frequently a smoke screen to cover their end-results. What would be the result if a series of one thousand cases treated by the Abrams method could be analyzed as to accuracy of diagnosis, treatment, and end-results! Apply this to each of the various cults and it is hard to conceive a more powerful argument with which to approach the legislature.

Now for the fly in the ointment. One of the speakers on end-results mentioned especially that certain very interesting and valuable summaries were impossible on account of incomplete records. Here we have the crux of the whole matter, **Records,** first, last and always, **Records!** Without records we can do nothing. Records must be honest records, not padded ones; they must be accurate pictures of the cases; they must convey to the mind of the reader the picture which the eye of the observer sees; they must give facts not merely the conclusions which the writer draws from the facts; they must be complete, giving the steps by which the diagnosis is approached; they must give the treatment accurately, freely and honestly; and, finally, they must show the exact result, not merely when the patient leaves the hospital, but the follow-up notes giving the **end-results.**

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Diseases of the Chest and the Principles of Physical Diagnosis. By George W. Norris, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Henry R. M. Landis, M.D., Director of the Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania, with a chapter on the Electrocardiograph in Heart Disease, by Edward Krumbhaar, Ph.D., M.D., Director of Laboratories of the Philadelphia General Hospital. Third Edition, Revised. 907 pp. with 433 illustrations. Philadelphia and London. W. B. Saunders Company, 1924. Cloth $9.50 net.

It is a pleasure to welcome the third edition of this now the leading standard work on the diagnosis of the chest. The book does not take up the subject of treatment. The present edition has been much enlarged and a description of a number of rare conditions, formerly omitted, are now introduced. The account of the latter is necessarily brief but the references given indicate where fuller information of a bibliographic kind may be obtained. The authors modestly remark in the preface that in writing this book "they have learned much and it is to be hoped that the reading of it will continue to be profitable to others". There is not the slightest doubt about it.

One naturally looks in reviewing a book for subjects especially familiar to the writer. Thus in the matter of aortic stenosis it is stated herein that the diagnosis rests upon (1) a systolic thrill over the base of the heart to the right of the sternum; (2) a slow pulse; (3) a systolic murmur heard at the aortic orifice and transmitted to the vessels of the neck; and, last, but most important, a feeble or absent second aortic sound. This last must occur in any marked degree of aortic stenosis, for the valves are so fused that closure would be an absurd possibility. The reviewer has had the unusual opportunity to see six cases of pure aortic stenosis and do autopsies on four of them within the past year. In one of these the systolic murmur and thrill were situated over the pulmonic orifice to the left of the sternum, altho the autopsy did not offer an explanation. The diagnosis of aortic stenosis was made during life by exclusion. In none of these cases was the aortic murmur transmitted upward but in some downward so, as the authors in this book state, it may be hard to say whether the systolic murmur at the apex is due to mitral relative insufficiency or to the aortic stenosis. Enlargement of the heart should be added as a fourth requirement in diagnosis.

There is an interesting discussion on the differential diagnosis of bronchiectasis. One point that is not brought out in distinguishing lung abscess from bronchiectasis is the presence of marked leukocytosis in most cases of abscess, with fever, whereas fever is rare in bronchiectasis. There is no more valuable or authoritative book on diseases of the chest in the English language and the present volume is the last word on the subject.

WINSLOW.

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Hospital Organization and Operation. By Frank E. Chapman, Director, Mount Sinai Hospital of Cleveland. 270 pp. The Macmillan Co., New York, 1924.

This volume brings to those interested in the management of hospitals an excellent hand book, the necessity for which is well phrased by the following extract from the introduction: "Today the hospital's position in the health field entails obligations of service beyond the fondest imaginations of the administrators of a few years ago. To meet these obligations a complete evolution in administration has been necessary and an activity has been created, the scope of which but few realize." The author has wisely refrained from too great detail, realizing fully that the conditions which are to be met vary in each locality but he has given an excellent exposition and discussion of the fundamental principles involved, and has illustrated these principles with many concrete examples.

The opening chapter, "Function and Principles of Organization," gives the reader immediate confidence in the insight and the analytic and constructive ability of the author. A chapter is devoted to each department of the hospital in turn, illustrative examples cited, and most of the chapters are closed with a paragraph or two of concise summary. The chapter on "Medical Staff" should be read and digested by every member of the medical profession who takes advantage of hospital facilities in the care of his patients. Another chapter dealing with the application of the general principles to small hospitals should find a wide field of readers. Many excellent charts and examples of forms are to be found thruout the book and much thought is devoted to accounting purchase and issuing of supplies. It is an excellent work and one which should be in the hands of all hospital executives and governing bodies.

Coe.

Goiter: Non-Surgical Types and Treatment. By Israel Bram, M.D., Instructor in Clinical Medicine, Jefferson Medical College, etc. Cloth, 479 p. The MacMillan Co. New York, 1924.

The author classifies as nonsurgical types of goiter, exophthalmic goiter, simple parenchymatous hypertrophy, colloid goiter and puberty hyperplasia. Surgical goiter he classifies as toxic adenomas, ademomas, cystic goiters, etc. His chief theme is that Graves' disease is a medical and not a surgical disease. He affirms that exophthalmic goiter is a defensive reaction of the body against toxins, in which there is general dysfunction of the endocrines, and wholesale disturbance of the vegetative nervous system. The number of failures after thyriodectomy are brought forward against surgical treatment of Graves' disease and, on the other hand, the extraordinary success of the author's medical care with photographs, before and after, to prove more conclusively his results.

The medical treatment consists of rest in bed, for at least part of the day, a diet shorn of all meat and fish, and various drugs among which iodine, quinine hydrobromide, corpus luteum in females, and testicular extract in males, with veronal or luminal, chiefly figure. The clinical description of Graves' disease and diagnosis are given in a careful and exhaustive manner and the writer quotes freely from all the leading authorities on goiter, including our own Tate Mason.

However, it seems to the reviewer that the case of surgical or nonsurgical treatment of goiter is somewhat analogous to that of gastric and duodenal ulcer, and that even in exophthalmic goiter the special condition of each patient may determine the form of treatment desirable. Surgery is a more rapid way of attaining a cure but, especially in exophthalmic goiter, is not apt to be very successful without the most careful medical treatment as well. The success of purely medical therapeusis is quite remarkable in the hands of the author and it seems probable as time goes on that medical treatment will supplant much of the surgery in exophthalmic goiter, as it has in ulcer, thanks chiefly to the influence of Sippey in this country. This work is well worth reading and probably contains the most perfected technic for the medical treatment of exophthalmic goiter.

Winslow.

Principles and Practice of Obstetrics. By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics at the Northwestern Medical School. Fourth Edition, Thoroughly Revised. Large octavo of 1123 pages, with 823 illustrations, 201 of them in colors. Philadelphia and London. W. B. Saunders Company, 1924. Cloth $12.00 net.

This volume must be ranked as one of the foremost authorities works on obstetrics at the present time. A very welcome conservative attitude has been adopted thruout the book, which will be a big factor in stopping the radical obstetric procedure now so prevalent. The indications for abdominal section, forceps, version, pituitrin and bag induction have been closely drawn, stressing a policy of armed and watchful expectancy, with a resultant lowering of the maternal and fetal mortality. The laparotrachelotomy, or low cervical section popularized by the author, is fully described with twelve illustrations. To all those interested in obstetrics this book is of inestimable value, without doubt being one of the most conservative and at the same time comprehensive works on this subject in the English language.

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ORIGINAL CONTRIBUTIONS

THE RELATIONS OF THE PANCREAS TO DIABETES MELLITUS*

Horst Oertel, M.D.

MONTREAL, QUEBEC

Professor of Pathology, McGill University

It is not my intention to discuss with you the whole involved question of the pathogenesis of diabetes. That, at our present state of knowledge, is not possible. Recent researches, under the stimulating influence of the discovery of insulin, have shaken many of our old, firmly established beliefs of sugar metabolism, which had almost assumed the roles of dogmas. Old questions have been revived and thrown once more into the melting pot. Is, for example, blood sugar normally formed from glycogen? How much, if any, does fat contribute towards it? How is the formation of blood sugar regulated? How is sugar normally burned? What are the intermediary steps of sugar metabolism? What is the significance of alterations in respiratory quotient? Finally, and most important, is the diabetic state the result of a lack of proper burning of sugar, or is it due to increased sugar formation from either glycogen or fat. All these questions have been opened up again and find vigorous defenders on the negative and positive side.

If this conflict of opinions, regarding the functional and metabolic side, is strong, it is equally growing on the anatomic side as regards the anatomic basis of the diabetic state. No one doubts today that the pancreas has a relation to diabetes. That has not been questioned since the classic, fundamental researches of Mering and Minkowski, who in 1889 demonstrated that the removal of the pancreas leads in animals to diabetes, and that this strongly simulates human diabetes. But just what this relation of the pancreas is, is as uncertain today as it was thirty-five years ago.

With growing convictions and faith in hormone actions, it was natural to assume such an action also on part of the pancreas. Consequently, it was assumed that the pancreas furnished a hormone which was essential to the burning of blood sugar. This conception remained more or less indefinite, and just how a hormone may aid in burning sugar has never been satisfactorily explained. Nevertheless, it appeared a restful hypothesis and seemed generally to satisfy. Support came also from the anatomic side.

In 1878 Pawlow had discovered that tying of the pancreatic duct led to atrophy of the organ, but that this was not associated with diabetes. In 1900 Schulze and Ssobelow and subsequent investigators, observed that this atrophy was associated with a fibrous replacement, but they found within this fibrous tissue small clusters of, and insular cell remains. They took these for remaining islands of Langerhans, and reasoned, therefore, that tying of the duct is only followed by loss of glandular elements of the pancreas, but not of these islands. (It might be interpolated here that these so-called islands of Langerhans, named after their discoverer, are found in the animal and human pancreas embedded in the glandular tissue. They differ from the glandular acinar parts by being made up of cells, which are flat, pale and clear. These, moreover, are not arranged in the form of acini or tubules, but connected to flat, vascularized cell discs. In some animals they appear more distinct from the glandular parenchyma. In the human pancreas they are more intimately connected with it. They exhibit also more or less specific affinity for certain stains. Variations in their size, shape, number, transitions to parenchyma and staining reactions are, however, frequently to be noted.)

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*Read before the Third Annual Meeting of Pacific Northwest Medical Association, Vancouver, B. C., June 26-28, 1924.

It was natural, therefore, to bring this apparent persistence of the islands into a relation to the absence of diabetes after tying of the pancreatic duct, in spite of marked pancreatic reduction. This view received strong support in the ideas of Laguesse, who in 1893 first enunciated his belief in an endocrine function of the islands, and particularly in the anatomic investigations of Opie and Ssobelow (1900-1901) who, with others, later reported island lesions or loss in cases of human diabetes. Thus the island theory of internal secretion seemed well established. The anatomic evidence of island changes was therefore coupled to the prevailing views on sugar metabolism for the explanation of diabetes. It is still the prevailing view; diabetes is due to lack of burning of blood sugar. This results from lesions of the islands of Langerhans, which prevent the normal supply of the hormone which is necessary to burn sugar. Sugar, therefore, accumulates in the blood, leads to hyperglycemia, and, having crossed the threshold of renal excretion, is eliminated in the urine.

I believe this whole conception of the pathology of diabetes incorrect, but as it would take me here too far to enter upon a discussion of the whole diabetic problem, I will confine myself to the role of the pancreas.

As an introduction it should be mentioned that neither the prevailing opinion on sugar metabolism, nor the island theory has been unreservedly accepted by all competent authorities. Most prominent to name in this connection are Von Noorden and his school, and Swale Vincent and his coworkers. Von Noorden has always denied that inability to burn sugar was at the root of diabetes, but that, to the contrary, there occurred an overproduction of sugar in the body. Swale Vincent, from the physiologic, anatomic side, has as firmly denied the anatomic and functional independence of the islands, and their relation, as organs of internal secretion, to sugar metabolism. Years ago also, two investigators in my laboratory, Milne and Peters, tested critically all the metabolic and anatomic evidence so far adduced in support of the island theory, and were unable to substantiate it for a number of reasons, which I need not detail here. But as far as the pancreas itself is concerned, they came to the conclusion, after careful anatomic and experimental investigations, that the islands of Langerhans are part and parcel of the pancreatic substance, interchangeable with the glandular elements, and not independent structures. They further reviewed all the other evidence in favor of their independence and came to the conclusion that this was open to grave criticism and doubt and to quite different interpretations. They found, moreover, that the tissues in diabetes had not lost the power of burning sugar, but that the blood exerted a marked, often increased diastatic activity, readily converting glycogen into sugar.

Based on these observations, they reasoned that, first, not the islands alone, but the whole pancreas must be concerned in diabetes, and that the observations on the diastatic power of diabetic blood with persistence of ability to burn sugar by the tissues, rather supported the idea of an increased sugar production from lack of pancreatic regulation. This view, expressed in 1912 by Milne and Peters, is recently shared by an eminent diabetic investigator, Geelmuyden of Christiania.

But what are the islands and why are they interchangeable with the parenchyma? In order to understand this, we must recall the extreme lability and fluidity of pancreatic structures. The islands are in animals and man embryonic pancreatic parenchyma, intimately connected to, and arising from the ducts. They are, therefore, genetically and anatomically not independent. They are seen in certain animals, as in some types of fishes, with the first evidences of the gradual condensation of an at first diffusely distributed pancreatic substance, in different localities of the abdomen. They are most abundant in the growing pancreas, they reappear in great abundance in emaciation, and they play generally the role of reserve tissue in later life. Thus, they may again arise out of parenchyma, just as parenchyma arises out of them. They may disappear, therefore, in pancreatic atrophy without leaving any traces. In other words, the islands represent a phase in the constant regression and progression of the pancreas, are evolutionary phases.

Reitmann' many years ago called attention to what was then regarded as a puzzling fact, namely, to a constant degeneration and regeneration pancreatic structure. Anderson and myself later lound these often markedly accentuated in the great majority of the normal pancreas. But a balance is maintained between cell and tissue collapse and loss and their reconstruction. This balance, however, is not always maintained and in some organs occurs, therefore, sooner or later (probably on hereditary basis) exhaustion. Thus, regression overtakes and outsteps regeneration. It, therefore, runs ahead of regeneration and the whole organ then suffers increasingly from collapse and a break up of parenchymatous structure. Regenerative attempts continue, but these, in the exhausted organ, are only incompletely performed, and aborted, altho sometimes hastily. The pancreas as a whole thus shrinks, and it loses microscopically the structural arrangement of the normal glandular organ in an arrangement of its cells into acini. Instead appears a diffuse irregular mass of disassociated acinar cells in process of degeneration and undifferentiated proliferation. Thus occurs "the essential atrophy of the pancreas" which, according to my findings, characterizes the majority of cases of severe diabetes in the young. Here islands disappear, not thru independent destructive loss, but by revision and interchange with parenchyma. The diabetic pancreatic lesion is, therefore, fundamentally represented by an essential collapse of the whole organ.

I will not go any further, but simply point out that the generally still accepted views on the internal secretions of the islands in relation to burning of blood sugar must be revised. Not the islands, but the pancreas as a whole is concerned in the diabetic symptom complex. It is still an open question whether the concern of the pancreas in sugar metabolism occurs thru an internal, chemical secretion, or in some other manner as regulator of metabolic activity. Much additional experimental evidence has recently accumulated which is in favor of this latter view, and there is hardly anything which, when critically reviewed with our present knowledge, remains in favor of the original concention.

One closing word of caution on the more general aspect of endocrine activities and the internal secretions. It has become fashionable to attribute almost every obscure disturbance in the internal economy and of growth in our bodies to corresponding abnormalities in internal secretion. This is a grave, unscientific looseness of reasoning and a proper note of warning has recently been sounded in this respect by an eminent investigator of the internal secretions, Bauer of Vienna. As a matter of fact, we are still on very uncertain grounds and largely speculate as regards the direct modifying effects of internal secretion on tissues and functions of the body. Much has been assumed here and very little has been proved, and the danger lies in treating assumptions as facts and then utilizing them for the explanation of obscure body disturbances. That is fallacious and we are suffering today from hasty generalizations and a desire for spectacular effects and cures.

Thus the fundamental question of how many of the disturbances in the economy of the body occur simply in correlation with coordinated lesions in organs of internal secretion, but not in direct dependency, is still open in the majority of instances in which this combination occurs. That some of these combinations are simply coordinated faults in development which arise out of a general hereditary tendency seems certain, and this goes back to faults in the original mechanism of fertilization and fusion of heriditary substances.

The most important lesson of the whole problem of diabetes today is, that we should keep our minds open in regard to the questions of internal secretion, and that here again as elsewhere in pathology, a sound knowledge of function requires a reliable anatomic objective basis. We must, moreover, distinguish between assumed interpretation and proved explanation.

Is Modern Life Too Strenuous? One out of every 123 persons in the United States is confined in an institution supported by the state because he is either mentally defective, dependent, or criminal or delinquent, according to figures given in the September Hygeia, popular health magazine (Chicago). "The fact that so large a part of our population does not meet the demands of society must inevitably arouse the question whether the strain of modern civilization is passing the limit of human endurance," it declares. In regretting the large amount of juvenile delinquency, the magazine puts the blame on the lessening of intimate home ties, which formerly were the pride of American home life.

INDICATIONS FOR THE USE OF INSULIN*

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Some years ago I proposed a classification of diabetes, based on the type of the course of the disease and to some extent on inferred etiology rather than on the severity of the diabetic manifestations, as is the common practice. I particularly emphasized the distinctions between what I called the acute progressive type of diabetes and certain chronic or benign forms. Falta speaks of the acute progressive type as the malignant form of the disease. My reason for attempting such a grouping was to facilitate prognosis and to assist in determining the intensiveness of the treatment to be employed.

I believe it is generally agreed that insulin should not be administered in the haphazard manner which we are more or less forced to resort to in the use of many medicinal preparations, and that when it is used the patient should receive a thoro course of instruction in dietetics and be able to weigh his food and compute with accuracy its proportions of carbohydrate, protein and fat. This is a considerable task both for physician and patient, and an expense of time and energy. Indeed, the best results can usually be obtained only in an institution, and by condemning the patient to a more or less mechanical life which must seriously interfere with his pursuits and social activities, and which sets him apart, so to speak, as an invalid. Is such rigorous treatment desirable in all cases of diabetes? I believe it is, whenever the acute progressive form of the disease is dealt with, and it should be introduced as early in the course as possible. On the other hand, it seems to me that many patients with the chronic types of diabetes are better off with a less rigid diet and without insulin.

In order to make myself clear in this matter I must emphasize again that the severity of the diabetes is not a criterion of the gravity of the morbidity. For instance, a patient with the chronic type of the disease may be percipitated into a critical diabetic state by an accidental infection or a surgical operation. Temporarily, under such circumstances, severe diabetes may be manifested by complete intolerance for all sugar, a negative nitrogen balance and intense acetonuria. Yet if the immediate emergency is controlled by insulin and other measures, tolerance will rise and eventually reach a high level which will be maintained for years. Joslin would call this severe acidosis in mild diabetes. I should prefer to call it a severe diabetic state in a patient with a benign form of diabetes. On the other hand, a patient may be afflicted with the malignant type of diabetes and yet, during the first two or three years of illness, enjoy a fair tolerance and escape any great inconvenience, particularly if he follows a fair diet and has the good fortune to escape complicating infectious diseases. In this type of disease, however, the prognosis is bad, tolerance gradually falls and death usually results within four or five years. This is an instance of a diabetic process intensely grave, but temporarily mild. Examples such as these illustrate the inadequacy of the common classification of diabetes on the basis of severity, as mild, moderate or severe.

A common rule for the use of insulin has been to resort to it only when the patient's tolerance was so low that it was impossible to provide sufficient nourishment otherwise. This I believe to be an error when acute progressive diabetes is being dealt with; indeed, it is in this group of cases and particularly in the patients in whom the disease is detected within a month or two of the onset of symptoms, that rigorous treatment gives the greatest promise. Conclusions at this time would be premature, but, theoretically, the earlier cases are curable, and, actually, the few patients we have treated within a few weeks of onset have encouraged us to hope that very effective therapeutic results may be obtained. Unfortunately, in institutional work there is a dearth of such early cases. They come, instead, to the attention of the general practitioner, and for this reason I am bringing this message to you, hoping that you will recognize these early malignant cases and start vigorous treatment in time.

The recognition of acute progressive diabetes and its differentiation from the benign forms of the disease must be based largely on the acuteness of onset. This is not quite safe as a criterion, as will appear, but is the best available at present. If doubtful cases are handled cautiously, no irremediable mistakes will be made. The other cardinal sign is the steadily increasing severity, the progressiveness. This, however, is not a diagnostic aid, useful in detecting early cases, altho it is of primary importance later in confirming or disproving the original conclusions as to the type. The age of the patient is an additional guide. Acute diabetes is the diabetes of childhood and the early decades. Age, however, is not an infallible guide, because early cases of a benign form occur in children, as Salomon, Graham, and Riesman have noted, and, on the other hand, the malignant form occasionally appears in older people. Sex is not a diagnostic criterion. Race is interesting because of the predilection of the Jews for the benign disease. The Jews appear to be no more susceptible than others to the malignant form. Obesity, which so commonly accompanies or precedes the benign type of diabetes, is not noticeable as a factor in the acute progressive type. The history of diabetes in the patient's family is no more common in acute progressive diabetes than in the other forms. A history of a preceding infectious disease, such as scarlet fever or influenza, is obtained in not more than half of the cases. In many instances the previous history is one of excellent health and normality, the symptoms of diabetes appearing explosively and without warning.

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* Read before the Forty-sixth Annual Meeting of Montana State Medical Association, Helena, Mont., July 9-10, 1924.

As an illustration of an unheralded onset I might cite the case of a patient admitted to my services a short time ago. This woman, thirty-two years of age, had no knowledge of the occurrence of diabetes in her family. Her childhood and early womanhood were perfectly normal. She is intelligent and active in social affairs. Recently she noticed that she was more fatigued than usual by a cantata rehearsal. The following day, Wednesday, she began to urinate excessively and was extremely thirsty. Wednesday and Thursday the fatigue increased. Thursday night her back and limbs ached badly, her stomach ached and she vomited. The physician who was called found sugar and advised the patient to come to the Mayo Clinic. She arrived the next morning in a condition bordering on diabetic coma, somnolent, markedly dehydrated and with hyperpnea, such as Kussmaul described. The urine contained abundant sugar, the blood 350 mg. of sugar for each 100 c.c., and the plasma carbon dioxide capacity was 19 volumes per cent.

This patient would have died, had management been greatly postponed. As it was, she responded promptly to insulin and other anticoma measures, and since all the evidence pointed to a very recent onset, I anticipated a prompt regain of tolerance. However, judging from the suddenness of the onset and the absence of any cause, such as a preceding infection, which might precipitate acidosis in a patient with a chronic diabetes, this is certainly a case of malignant diabetes, and within two or three years will progress to a stage of great severity unless this can be prevented by vigorous treatment.

Not all patients with the acute progressive form of diabetes suffer such a stormy onset, but, and this is of the greatest importance, nearly all of them consult a physician because of the cardinal symptoms of diabetes: polyuria and polydypsia. How different are the stories of the patients with chronic diabetes! In them glycosuria is discovered, often in the course of a routine physical examination, and often on the occasion of applying for life insurance; or the physician is sought to treat some complication, such as furunculosis, pruritis, cataract or gangrene. In case polyuria and polydypsia are presenting symptoms, which is quite rare, there is usually a long history of antecedent diabetes, sugar having first been found many years previously at a time when the patient suffered no inconvenience therefrom. The onset in the chronic types is very insidious, and polyuria and polydypsia are not early symptoms.

At times the examiner is in doubt. For instance, a child with enuresis may have sugar in the urine. A diet is started at once and he is sent to the hospital. From the age of the child acute progressive diabetes is suspected. The enuresis, however, has existed for years and probably is not the result of polyuria. In such a case a sugar tolerance test may be helpful. Fifty grams of glucose are given by mouth as a syrup, and the blood sugar level is observed for a period of three hours. If the curve remains low we may feel reasonably confident that the case is one of renal glycosuria, and of no serious consequence. If the curve is very high, I should be inclined to regard the case as one of the malignant type and to plan treatment accordingly. If, however, the curve is only slightly higher than normal, it may not indicate a grave condition, the case later proving benign and not progressive. In such instances it is difficult to reach a decision.

Another illustration of doubtful cases is the following: A man, aged forty years, presents himself with diabetes in a stage of considerable severity, beginning at the time of a recent attack of influenza. The urine has not been examined, and polyuria not been troublesome until this attack of influenza. There is also no history of previous pruritis or neuritis suggestive of a hyperglycemia of some duration. On the other hand, the man is fleshy and suffers from occasional sharp colics, possibly originating in the gallbladder. Such a patient may have had benign diabetes for years, his condition on examination representing merely the effect of the recent influenza; or he may have had an acute onset of the malignant type of the disease. There is no way of knowing definitely except by watching the course of events. However, if tolerance should improve steadily under good treatment so that later a diet, reasonably rich in carbohydrates, could be taken without provoking glycosuria, I should be inclined to consider the condition benign.

While such doubtful cases do occur occasionally, it is certainly possible to determine the type of diabetes in 80 per cent of the cases, providing sufficient care is exercised in obtaining the history; treatment, as I have indicated, should depend on this differentiation. The patient with malignant diabetes should have insulin and institute the necessary, rigid dietary control as early as possible. This should be continued year in and year out until we have more knowledge concerning the results of such treatment, or until some method of treatment better than insulin and diet has been developed. The temptation to discontinue insulin from time to time in order to test tolerance should be resisted, and every effort directed toward maintaining sugar-free urine and normal blood sugar.

In cases of acute progressive diabetes, untreated or improperly treated for several months, there is, I fear, little hope of arresting the disease. I have yet to see an actual gain in carbohydrate tolerance under these circumstances. The most that can be offered such patients is the increased strength and vitality that may be secured by daily injections of insulin and an accurate diet.

Most patients with diabetes have the chronic or benign forms. I should judge, from my experience, that they constitute 70 per cent, possibly more than 80 per cent. This group may be subdivided and the prognosis is not always equally favorable. Many of the patients are obese, many of them have associated disease of the gallbladder or appendix, which may be of etiologic significance, and a large number are affected with arteriosclerosis which, as Hoppe-Seyler suggested, may be a cause for diabetes. There is a group of patients with thyroid disease, in whom the significance of glycosuria is often difficult to appraise. This is also true in cases of glycosuria in pregnant women. True diabetes complicating pregnancy is rare. Finally, there is a group of very healthy persons who excrete small amounts of sugar daily and yet never develop symptoms of diabetes. Some of these have frank renal glycosuria. Others develop a certain amount of hyperglycemia and yet their condition appears to continue indefinitely benign.

Whether or not insulin should be used for patients with a benign type of diabetes depends entirely on the severity of the condition. In the presence of complicating infections which are provoking acidosis, it is definitely indicated to combat the temporary emergency, but during the uncomplicated periods, which may continue for years without appreciable change in carbohydrate tolerance, it seems to me to be unwise to resort to insulin. Many such patients are overtreated to their great disadvantage. Take, for example, the case of an active business man, between forty-five and fifty years of age, who is somewhat overweight and in whose urine sugar has been found at times for a period of six or eight years. The man has not adhered to a very rigid diet, and in spite of very ineffective treatment, there has been little, if any, loss of tolerance. On a qualitative restriction, with sweets eliminated, breadstuffs reduced to one slice a meal and protein slightly restricted, sugar appears in traces in the urine, and the blood sugar is at a level of about 200 mg. for each 100 c.c. If the treatment is confined to such qualitative dietary measures, the patient will be able to continue the active management of his business, and I am sure that, in most instances, we will have done all that it is wise to do. True, we may be hastening cataract, retinitis and other vascular complications by such procrastination, but, on the other hand, it is a common experience for such patients to continue in reasonable health and activity for twenty or thirty years with little or no dietary restriction. The alternative is a rigid regimen and daily injections of insulin, which will seriously interfere with normal pursuits and almost certainly provoke invalidism. The patient will give up his business, lose interest in life, and in consequence die earlier than if the doctors had not interfered.

It is true that there are patients who, after a period of several years of mild diabetes, lose tolerance for carbohydrates, lose weight and develop other symptoms of severe or moderately severe diabetes. But, as a rule, this does not happen until the patient is well along in years, and I doubt whether rigid treatment instituted early would prevent it. It is in such cases particularly that the pathologic examination reveals gross and extensive degeneration of the pancreas, the result either of arteriosclerosis, or of extensive, altho chronic, inflammatory processes, little amenable presumably to dietary measures. This being true, why not postpone the rigid regime until these patients really require it? Personally, I favor such a course.

Briefly, then, I should outline the indications for a rigid or quantitative dietary and insulin treatment as follows:

1. I should treat intensively all patients with

the acute progressive or malignant type of diabetes, whether at an early mild stage or at a later and more severe stage.

2. I should use insulin and the rigid dietary regime in cases of the chronic form of diabetes, if the tolerance is such that a qualitative diet results in a daily excretion of more than a good trace of sugar in the urine. By qualitative diet I imply a diet selected by the patient to suit his taste without the use of food scales or tables of food composition, but strictly limited in protein, in sweets and in breadstuffs. An amount of meat, equivalent to one lamb chop a day, may be allowed, but no more. One-half slice of white bread, or its equivalent, may be allowed daily, but no sweets.

3. I should not use insulin or insist on a rigid diet in cases of the chronic type of diabetes, if the patients can take such a qualitative diet without excreting more than a good trace of sugar daily, and in this type of case I should not be influenced by the blood sugar level.

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Hyperinsulinism and Dysinsulinism. Seale Harris, Birmingham, Ala. (Journal A. M. A., Sept. 6, 1924), describes hyperinsulinism as a condition, perhaps a disease entity, with definite symptoms; i. e., those described as being due to hypoglycemia. It seems probable that one of the causes of hyperinsulinism is the excessive ingestion of glucose-forming foods and that, as the result of overcapacity induced by overeating, the islands of Langerhans become exhausted by hypo-insulinism (diabetes) follows. It is possible that the hunger incident to hyperinsulinism may be a cause of overeating, and, therefore, the obesity that so often precedes diabetes. It seems probable that hysinsulinism, either an increase or a decrease in the secretion of insulin, may follow infection or trauma of the pancreas. Since excessive hunger is a symptom of hypoglycemia, itm ya be that normal hunger is the call for glucose and that it may be in part or wholly of pancreatic origin and not entirely all expression of an empty stomach.

DIABETIC TREATMENT*

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An epitomized paper covering the treatment of diabetes in all its essentials is manifestly impossible to compile; even an outline of it would reach far beyond the contemplated scope of this paper. Inasmuch as the handling of diabetics in Idaho presents a problem which is encountered in no other, or very few, localities in the United States, I believe it is apropos that I should confine my remarks to our local conditions, where we have not the advantage of large public, free and charitable institutions for their disposal, where the demands of economy preclude prolonged hospitalization and study and where our patients live, in a goodly proportion of cases, at distant and almost inaccessible places.

The work of Allen, first brought before the profession ten years ago this month, for the first time put the treatment of diabetes on a sound basis—that of diet and undernutrition—which stands first today. During the past two years the work of the Toronto school and others on insulin has added another and greater impetus to the study and treatment of these cases. The magnitude of this impetus was unrealized by me, until in starting to compile a bibliography for this short paper, when I found that I have collected during the past eighteen months some one hundred original contributions, three text-books and many manuals.

From this avalanche of literature and research of the masters which I have tried to correlate, metabolize and assimilate, with the sitting at the feet of the masters, with the institution of thoro laboratory and diatetic observations and more or less complete study of some two score cases, one is brought to agree with Sir J. Rose Bradford that "diabetes is not an entity, but a clinical label attached to a number of conditions, with varied origin, different morbid anatomy and liable to follow different courses;" the ordinary definition that it is a disease, in which the secretion of the isles of Langerhans is deficient with impaired utilization of carbohydrate and excretion of glucose in the urine, appearing to be insufficient.

While an academic discussion of diabetes would probably be much more interesting and instructive to my listeners, I feel that this paper would go amiss, should I do other than give you my personal experiences in the treatment of diabetes during the past fifteen months. Upon a patient's being found to be glycosuric, or having been referred for the treatment of his diabetes, in the absence of any pressing complication, my routine has been as follows:

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A complete history and thoro physical examination. The importance of a complete history is obvious, embodying symptoms, onset (sudden, gradual, recent, remote); impending complications, relation to infection, acute and chronic, general or focal; past illnesses; nervous and mental history; family history.

From my series the following impress the necessity of the foregoing. A comatose boy of four years, with 5 per cent sugar and 4 plus acetone of thirty hours duration, following thanksgiving festivities, nearly moribund, hospital care, cleared up and is now getting along without insulin and slight dietary restriction with only an occasional show of sugar, following the clearing up of his acute bronchopneumonia (undoubtedly the precipitating cause). Several users of large insulin unitage have been reduced to minimal or none by having dental infection eradicated.

A girl of 11 years, persistently on U 30 and diet restriction, up to removal of questionably infected tooth, has been entirely sugar free, on slight dietary restriction for four months, following its eradication. The onset of her diabetes followed the devitalization only five weeks. One precoma case, now continuing his work as blacksmith, had lost three brothers and three children from diabetes. Practically all my cases have borne a definite relation in onset and severity to infection general or focal; to offset and alleviation in proportion to the correction of these.

Physical examination should be thoro. In addition to the customary physical and laboratory examinations, one should ascertain any endocrine, nervous or mental factor, any one of which may be the principal. The high percentage of these factors, more or less definite in my cases, impresses me that these are not mere coincidences. Mental anguish, stress or anxiety will show in all cases, and sometimes to a striking degree. All my adult cases, except those in precomatose condition, have shown a high blood pressure. The x-ray should be used freely in search for infection, especially on teeth and sinuses. Urine examination, complete, with quantitative sugar and acetone; other urine work as indicated. Blood sugar examinations I have found of little or no value and have done none for four months. In a clinic where they can be done several times daily and at the proper times, they are undoubtedly of value, but unless they can be done in this manner, they are misleading, decidedly obnoxious to the patient and time consuming. The general condition of the patient is an infinitely better criterion of his reactions than an occasional blood sugar examination.

While it is highly desirable to treat all cases in hospital for the first few days or weeks, where one has the services of a trained dietitian and nurses, this, aside from those cases with complications, is unnecessary in a vast majority of cases. As the treatment of complications will be considered later, let us now take up the ordinary case, whether hospital or ambulatory.

At the first session the patient is told all the facts ascertained at physical examination; what diabetes is; the significance of sugar and acetone, the method of getting rid of his infections outlined; is furnished with a "diabetic primer" and other necessary charts; carbohydrate, protein and fat, the method of collecting, measuring and procuring sample of urine 7 a. m. to 7 p. m. are explained; he is impressed with the fact that insulin does not cure diabetes but is only insurance against its severe symptoms; that he is going to treat his own case under my direction; that the more he does with diet and the better he masters it the more economical and comfortable he will be ("use my noodle instead of my needle" as one boy expressed it) and that this is the all-important factor. At each succeeding daily session, he does a qualitative urinalysis of sugar and acetone, while I do the quantitative, quiz him and instruct him.

The interest which patients manifest and the avidity with which they undertake their care is remarkable. My patients have ranged from 4 to 69 years of age, a couple of illiterates getting along as well as the brightest. All have done exceedingly well, except three christian scientists. Thru the influence in which they live, two of the young ones, girls, are now dead, the only fatalities, both sudden and without my observation; the third does his best to convince me that it isn't insulin that helps him and is very troublesome.

While the subject of diet is being amply covered in another paper, it is impossible to talk on diabetic treatment without saying a few words thereon.

There are four things to be considered in diet prescription:

1. Total dietary restriction and undernutrition.
2. Protein restriction, as 58 per cent of protein can be utilized as glucose by the organism and further that protein causes a general metabolic in-

crease; .66 to 1 gm. per kilo body weight maintains a patient in nitrogen equilibrium.

3. Carbohydrate restriction. "A weakened pancreas in the presence of sufficient carbohydrate may be stimulated into a state of fatigue and decreased function" (Woodyatt).

4. Balancing of ketogenic (fatty acid) and antiketogenic (glucose) in the food. When a disproportionate amount of ketogenic material is utilized by the organism, the possibility of acidosis is encountered, resulting in coma, if not checked.

There are innumerable diet lists, charts, tables and short cuts, but I have found none as satisfactory as the simple formula devised by Evans[1], of Pittsburg, based on the work and figures of Woodyatt, meeting all the above considerations, which enables one to adjust his diet easily and properly, in proportion to caloric needs without difficulty; also avoiding the necessity of figuring or estimating the glucose tolerance. This is the formula:

$$\text{Carbohydrate equals } \frac{\text{Calories minus 8.9 Protein}}{22}$$

Knowing the weight of your patient in kilos (1 gram of protein or less per ko.) and the number of calories desired, the other figures are readily and accurately ascertained.

This provides calories as desired, nitrogen equilibrium, and a ketogenic-antiketogenic ratio always within the limits of safety: 1.5:1. While even 3:1 ratio has been recommended by some, I have been unable to see any advantage therein.

After the first contact and the status of my patient established, I like to start him off on a milk diet, q. 2-3 hr., not exceeding a quart a day, instead of a fast (in spite of the fact that this is not considered just right by some). As soon as he is sugar free, I start the basal maintenance diet (figured from the chart of Wilder and Adams), increasing by calories, calculated by above formula; starting at the sugar-urine threshold with minimal (U 5 bid) insulin unitage, balancing one against the other to a satisfactory diet level. In this way I have so far encountered no hypoglycemic reactions, and it has proved a very satisfactory method.

In the beginning of this work, I provided all my patients with scales, measures and many appliances. More recently, however, I have not done so, as I find the burdens too many and enthusiasm inclined to wane when there is trouble in preparing meals. I lay special stress on gross measurements as teaspoonful, tablespoonful, ounce, 30 c.c., 5 grams, and the like; have found this equally as satisfactory clinically, and much better for the morale of patients and their families. The constant close weighing of every particle of food is disheartening to the patient and not more accurate than the gross measurements, in view of Atwater's tables, which show great variations in nearly all foodstuffs. I have found it much more difficult and much more important to keep the patient's interest in palatable diets.

Insulin administration is made as simple as possible, once or twice daily. Boil syringe and needle (platinum) with carbolated alcohol for site of injection. Patients are instructed to remain sugar free. If sugar appears, they are instructed to take half their daily allowance a day of milk diet, or a half day's fast, continuing their insulin unitage.

As I have encountered no acute surgical emergencies, other than minor, only three gangrenous conditions which were not persistent, the question of the treatment of complications will be confined to that of coma and infection, the same things, as all infections are potential comas. Upon the appearance of anything unusual, the patient is considered to be a case of precoma and is to so consider himself. He is taught to go to bed; drink plenty of liquids (preferably hot), a glass every hour; restrict food to milk or orange juice; saline purge or enema; continue to treat the diabetes and let me know. If the urine shows increased sugar or acetone, give insulin in U 10-20 doses or even larger hourly, examining urine every few minutes (insert and retain catheter if in coma); give fluids freely, rectally or subcutaneously if necessary; no alkalis, no sugar; no other medication, except such supportive measures as may be indicated.

SUMMARY

My own experience with, and treatment of, diabetes during the past fifteen months has been outlined. The two deaths were due to gross indifference to my instructions and reverse environmental factors, rather than to any failure of treatment. My results have been satisfactory to me and patients and compare favorably with any I have had the pleasure of reviewing.

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[1] Evans, Frank A., A Method of Establishing Patients on High Calorie Diets with a Ketogenic-Antiketogenic Ratio within the Limits of Safety. Am. Jour. Med. Sci., Vol. clxvi, 106 pp., July, 1925.

MORTALITY OF DIABETES MELLITUS IN SEATTLE AND THE STATE OF WASHINGTON* **

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Believing that some may not realize the high mortality of diabetes mellitus as recorded for the entire registration area of the United States, as well as for the city of Seattle and the state of Washington, the following statistics have been partly compiled and partly extracted from the mortality tables of the United States Department of Commerce, and the biennial reports of the Washington State Board of Health.

During 1920 there were 1310 deaths per 100,000 due to all causes, in the registration area of the United States, representing 82 per cent of the total population of the country, and 16 deaths per 100,000 were due to diabetes. In other words, diabetes caused 1.22 per cent of all deaths from all causes during 1920. During 1921 there were 1160 deaths per 100,000 in the total registration area, and 17 of these were due to diabetes, or 1.4 per cent of the total deaths for the year. During 1910 there were 14.9 deaths per 100,000 due to diabetes. Joslin[1] says that indeed an increase in the diabetic death rate will probably continue to take place until examinations of the urines of each individual in the community are made, not only with each illness but also twice a year. Only in that way will the actual number of latent cases of diabetes be discovered.

As to the relative importance of diabetes as a cause of death when compared to other common causes, the following is enlightening. During the year 1921, in the entire registration area of the United States, heart disease caused 131,233 deaths, carcinoma of all types 71,491, tuberculosis of all types 68,179, acute and chronic nephritis 65,971, cerebral hemorrhage 64,831, pneumonia all forms 62,433; angina pectoris caused only 7,615, typhoid fever only 6,314, syphilis only 4,432. Exophthalmic goiter, perhaps commonly thought to be a frequent cause of death, is listed only 1,392 times, and diabetes mellitus, so often passed over lightly by both physician and patient, caused 14,083 deaths.

These same data for the state of Washington, and giving the years 1910 and 1920 for comparison, are as follows:

Deaths per 100,000 for the State of Washington

	1910	1920
Accidental	116.0	91.4
Tuberculosis, all forms	108.4	98.4
Organic heart disease	74.8	115.8
Pneumonia, both forms	71.0	88.8
Acute chronic nephritis	55.3	61.7
Cancer, all forms	51.7	82.0
Cerebral hemorrhage, embolus and thrombosis	46.3	67.2
Suicide	20.1	18.0
Senility	20.0	13.2
Puerperal state	16.9	18.2
Whooping cough	15.4	7.5
Diphtheria	12.6	9.2
Appendicitis	12.4	14.6
Diabetes mellitus	10.8	13.9
Meningitis (except T.B.)	6.7	4.7
Syphilis	5.4	9.6
Angina pectoris	5.4	8.2
Exophthalmic goiter	1.1	2.2
All causes	1003.1	1108.7

This is only a partial list of the causes of death, but includes the causes of over one-half of the total number of deaths from all causes. Diabetes is included with organic heart disease, pneumonia, nephritis, cancer and apoplexy in that it shows an increase in the number of deaths which it causes each year. Unlike all of these named diseases, there has been a method of treatment available of greater effectiveness than that available for any one of the others. This can only mean that either the physician has failed to offer intelligently this method of treatment, or the patient has refused to avail himself of it. The truth probably is there has been some of both. The death rate even of tuberculosis, during this ten year period, has been reduced approximately 10 per cent, while that of diabetes has increased 36 per cent. This fact is not one of which the medical profession of this state can be proud.

This increase from 1910 in the death rate of diabetes mellitus per 100,000 is further shown by years in the following table, both for Seattle and the state of Washington.

Deaths from Diabetes per 100,000

Year	Washington		Seattle	
	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000
1910	114	10.8	44	14.2
1911	110	10.5	36	12.9
1912	110	10.2	30	10.9
1913	155	14.2	45	16.3
1914	156	13.8	47	15.8
1915	177	15.3	55	17.2
1916	169	14.6	56	17.0
1917	181	15.37	50	15.6
1918	216	16.93	73	17.1
1919	204	15.4	56	14.5
1920	189	13.9	60	15.0
1921	226	15.1	61	18.4
1922	275	19.0	60	16.7
1923	236	16.0	49	12.6
1924 (½ yr.)	67	4.5 (9.0)	28	7.0 (14.0)

A further very interesting fact shown by these

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*From The Virginia Mason Hospital.

**Read before King County Medical Society, Seattle, Wash., Sept. 15, 1924.

1. Joslin Elliott, P., Treatment of Diabetes Mellitus, Third Edition, Lea & Febiger.

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figures is that the highest death rate was reached in 1922. Insulin first came into limited use in the state of Washington about January 1, 1923. The death rate for that year shows a sharp but moderate drop. However, for the first six months of 1924, during which time insulin has been available for general use, the death rate per 100,000 for Seattle and the state is the lowest that it has ever been since the state was first taken into the registration area.

We should not be deceived by this statistical improvement in the death rate into believing that there is a lowered incidence of the disease. Joslin estimates 1,000,000 diabetics in the United States. On the basis of a national population of 110,000,000 people, and a state population of 1,480,000, allowing a deduction of 3,000 because of the presence of a small percentage of European immigrants and Jews, the state of Washington has, conservatively estimated, about 10,000 people suffering from diabetes in all forms, from mild and undiscovered to the most severe type. During the World War there were 104 diabetic deaths, 330 discharges for disability because of diabetes, and a total of 718 cases among the fighting forces of the United States.

Comparing our sister states, Oregon and Idaho, with Washington, as to the total deaths and death rate per 100,000, the following figures from the report published December 27, 1923, by the United States Department of Commerce, show Oregon to have the highest diabetic death rate for the years, 1920, 1921 and 1922:

State and Year	Number of Deaths	Rate per 100,000
Oregon—		
1920	138	17.5
1921	170	21.2
1922	191	23.5
Washington—		
1920	190	13.9
1921	210	15.1
1922	289	29.5
Idaho—		
1920	......	......
1921	......	......
1922	67	14.6

These comparative figures for the three states also show the rapid rise which the death rate from diabetes was making on January 1, 1923, when insulin first came into use in the Pacific Northwest. After noting the sharp drop in death rate for 1923, and especially for 1924, the following question forcibly presents. Knowing that a large number of diabetics are employing insulin, chiefly to maintain a feeling of well-being and to ward off acidosis and not as an adjunct to properly adjusted and carefully controlled diet, and thus maintaining the urine free from sugar, is this striking lowering of the death rate only temporary, and may not the death rate a few years hence rise abruptly higher, or perhaps to the highest yet recorded?

As to the age of death of diabetics in the state of Washington for the years 1921, 1922, 1923 and the first six months of 1924, the following table reveals the fact that the age at death in Washington is similar to the age at death elsewhere.

Ages of Death of Diabetes in Washington

Age at Death	1921		1922		1923		*1924	
	Male	Female	Male	Female	Male	Female	Male	Female
Under one month	0	0	0	0	0	0		0
1 month to 1 year	0	1	0	0	0	0		0
1 to 2 years	0	1	0	0	0	0		0
2 to 5 years	2	3	1	1	3	2		0
5 to 10 years	4	4	4	10	1	2		0
10 to 20 years	15	8	17	12	4	11		3
20 to 30 years	9	5	10	5	5	4		2
30 to 40 years	3	4	8	9	8	10		1
40 to 50 years	12	7	12	12	7	8		3
50 to 60 years	17	20	22	24	27	28		22
60 to 70 years	13	34	41	21	27	26		20
70 to 80 years	13	14	33	19	25	26		11
80 years and over	2	4	9	5	6	6		5
Total Male and Female	90	105	157	118	113	123		
	195		275		236			67

*First six months only.

Corresponding with Joslin's figures, showing the greatest number of deaths from diabetes during the sixth decade, Washington has had during these three and one-half years, the highest death rate between the ages of 50 and 70 years. There is also a similarity in there having been a slightly greater number of female than male deaths.

The mortality in the treated cases is very much lower than in the untreated. On September 1, 1924, 125 cases had been seen by us, admitted either as known or questionable cases of diabetes mellitus. Of these, 106 had proven to be true diabetes, 6 cases of low renal threshold, and 13 cases of diabetes insipidus. Six deaths are known to have occurred to date. The number may be greater and is being checked at present by follow-up methods. Of these six deaths, one was due to gangrene, three to coma, and two to uremia in diabetics with a complicating cardiorenal condition. All except one death occured before insulin was available. This one death after the use of insulin occurred in a small boy aged four years. He seemed to recover so completely under treatment that the mother took the responsibility of deciding him cured, and contrary to instruction did not report back to her physician, and stopped the insulin. Two months later the child died, twenty-four hours after suddenly passing into coma.

Statistics are of little value as plain figures only, but if we learn from them and are stimulated to better practice, their value may become very great. What, then, are we to learn from these mortality statistics for diabetes for Seattle and the state of Washington?

First, that diabetes is a formidable disease with an average death rate of 16 per 100,000 for the state of Washington, and 17 per 100,000 for the city of Seattle, during the years 1920, 1921 and 1922; second, that since insulin has become available for general use (1923 and the first six months of 1924) this death rate has dropped to 4.5 for Washington, and 7.0 for Seattle for the past six months, which is 9.0 per 100,000 for Washington, and 14.0 per 100,000 for Seattle for the year 1924, provided the present death rate continues until January 1, 1925; third, that we must not draw the hasty conclusion that insulin will of itself greatly prolong life. Since the discovery of insulin, accurate knowledge concerning diet control has been widely disseminated thruout the country, a matter of education which was sadly neglected before. Also, the greater importance, if such is possible, of accurate diet control with insulin than without it, has been stressed. Fourth, it is more than likely that mortality statistics during the next five years will prove that patients treated with insulin without diet control sufficiently accurate to keep the urine sugar free, and the blood sugar level normal, have only briefly postponed the date of death. If careful diet control is being conscientiously practiced by the physicians and diabetic patients of Washington, the astounding improvement in the mortality rate of diabetes will continue, and the record of its reduction will be as enviable as is that of typhoid fever, smallpox and diseases with previously very high death rates, and at present very low ones.

In closing, it is desired to impress that portion of the medical profession of the Northwest, who are treating and will continue to treat the large majority of the cases of diabetes, namely, the men who are in general practice, not only with the necessity for accurate diet control but with the simplicity of it as well. To select a diet from a dietary prescription calling for a definite number of grams of carbohydrate, protein and fat, and to weigh accurately the articles selected to make up this diet, is such a simple procedure that twelve and fourteen year old children, after a single lesson rarely make an error. Even tiny tots test their own urine, and children beginning the teens take their own insulin. Surely with this eagerness to learn the medical profession cannot refuse to be teachers in such a cause.

THE CEREBROVENTRICULAR STUDY*

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1.—Definition.
2.—The Eye.
  (a) Subjective symptoms.
  (b) Objective signs.
  (c) Choked discs.
3.—The Cerebrospinal Fluid.
  (a) Spinal pressure.
  (b) Microscopic and chemical study.
4.—The Cerebral Ventricles.
  (a) Size and shape.
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5.—Established Facts.
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  (a) Arteriovenous aneurisms.
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  (d) Brain tumors.
  (e) Encephalitis.
  (f) Lues.
  (g) Hydrocephalus.
  (h) Brain abscess.
10.—Bibliography.

The general surgeon has been making use of the bismuth meal, the fluoroscope and the x-ray film as an aid in the diagnosis of abdominal lesions routinely for many years. Without this laboratory assistance abdominal surgery would have remained the exploratory surgery of a decade ago. The urologists have learned to depend upon the cystoscope, the chemical blood and urine analysis, the kidney function tests and pyelograms in the diagnosis of kidney and bladder lesions. Their study of the entire renal system has enabled them to operate with more certainty than was possible prior to the complete renal study.

Since Dandy in 1919 published his work on the use of air in the roentgenology of the cerebral ventricles, there has gradually developed a new method of examination of intracranial conditions which may be termed "the cerebroventricular study." The three factors in this complete study are (a) the eye, (b) the cerebrospinal fluid, (c) the ventricles.

(a) *The Eye.* In studying the eye one naturally observes changes in the motility, the pupil, the media and the disc of the eye. Visual fields are of little import since, as will be shown, they are so confusing except in a general sense. The great value of this part of the study lies in the presence or absence of edema of the nerve head, or atrophy, or congestive or active inflammatory changes rather than subjective symptoms.

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Ophthalmologists have allowed subjective symptoms of the patient rather than the actual physical conditions to control the final analysis. For instance, one may simulate with fair accuracy a central scotoma or a temporal blindness in the visual field, while one cannot voluntarily change a pupillary reflex or edematize an optic nerve. The relative value, then, of visual fields is comparable to the value of vomiting or general increased reflexes and not to the true Babinski or the atrophy of a single muscle.

About the eye the cardinal points of value in this study are enumerated as follows: (1) A true pupillary change from the normal, (2) a true optic nerve atrophy, (3) a true edema of the optic nerve. Other conditions, such as hemorrhages into the retina, muscle paralyses, visual field changes, lenticular, corneal and lid changes, while often associated with intracranial lesions, are not pathognomonic or always present. The study, then, of the eye is of importance, particularly with reference to changes in the cerebrospinal fluid and edema of the brain. Strangely enough these studies have caused those who are making them to doubt whether our past knowledge of choked disc is of much value. Increased intracranial pressure does not always mean choked disc or even a small degree of edema of the disc, while in encephalitis lethargica one may see a complete choking with practically normal pressure in the spinal canal and ventricles. How, then, may one explain these phenomena? This will be discussed later.

(b) *The Cerebrospinal Fluid.* In studying the cerebrospinal fluid we observe the tension which is easily recorded by means of the lumbar punctures and spinal manometer, before and after drawing off the fluid. The chemical and microscopic study of this fluid is, of course, routinely performed in the laboratory.

(c) *The Cerebral Ventricles.* While the needle is in the spinal canal and after the fluid is withdrawn, an equal volume of air is insufflated and x-ray films made. These should be anteroposterior and streolateral where possible. If the ventricles are not shown to contain air in these radiograms, it will be necessary to insert air directly into the ventricles after the method of Dandy and the radiograms repeated. Any change in the size, shape or position of either or both ventricles can be quite accurately determined, if the technic has been correct and the films properly developed.

Turning to the literature, one finds that Dandy, in 1918, reported on the use of air in the study of hydrocephalus. He reported 95 cases and described the technic for direct puncture of the ventricles, as well as that for the spinal puncture method which later was popularized by Bingle, who reported on a series of cases in 1921. Bingle has done more, perhaps, by the spinal method than any other observer, his total to date being 340 cases. Denk has reported on 318 and Weigeldt on 104. Others have made reports on fewer cases, altogether over 1000 having been reported.

The amount of air injected has varied from 5 c.c. to 1500 c.c., as reported by Towne in a case of hydrocephalus. The youngest case to be injected is reported by Dandy, a child three months old for hydrocephalus. The resorption of air from the ventricles varies from four to ten hours in the normal and as long as four weeks in abnormal cases (Weigeldt).

Application. According to Schuller the following conditions are accessible to this form of diagnosis: "1. Congenital or inflammatory occlusions of the spinal fluid spaces, most frequently of the narrow aqueduct of Sylvius or the connections of the fourth ventricle with the extracerebral fluid spaces (foramina of Magendie and of Lushka). 2. Adhesions of the basal cisterns and extensive adhesions of the subarachnoid spaces to the convexity of the brain. Tumors may also close the spinal fluid spaces. 3. Congenital smallness of the skull from premature synostosis of the sutures; the spinal fluid spaces may be compressed. 4. Dilatation of the fourth ventricle and aqueduct of Sylvius from occlusion of Magendie's foramen. The third ventricle may become bladder-like and protrude toward the base. Lateral ventricles are also often distended. 5. Unilateral or bilateral distension of the lateral ventricles from occlusion of the foramen of Monro. 6. Dilatation of the ventricle in senile or cicatricial contracture of the brain. 7. Brain hernias, rupture of the brain substance with spinal fluid fistulas. 8. Tumors, foreign bodies in the cavities. 9. Dilatation of the subarachnoid spaces at the convexity or the base of the brain. 10. Inflammatory adhesions. 11. General dilatation of the extracerebrospinal fluid spaces. 12. Contractions of the brain."

Reaction of Patients. According to different authors the reactions vary greatly. Thus, Dandy states that in one case a suden rise in temperature, nausea and vomiting followed air injection. Wideroe noticed the presence of pain localized in the cord at the site of the tumor. Bingel, reporting on one hundred cases, had no serious effects. Towne thought one case of hydrocephalus was made worse, but in a tumor case no effect. Martin and Uhler noted some unpleasant effects of only transient duration. Bassoe and Davis blame air for one death, but their description shows lack of proper technic. Alwens and Hirsch also noted localization of pain at the site of a cord tumor on constriction. Schott and Eitel are sure that yawning, sweating, and tenesmus are signs of shock and do not recommend the procedure. Gabriel noted about the same as the last named author, but thinks all symptoms pass away quickly and is enthusiastic for this method of diagnosis. Weigeldt after 104 punctures states that all symptoms due to air disappear after two to four hours and further states that the cell count of the spinal fluid does not change; notes the favorable results in epilepsy—decrease in the attacks—and calls attention to the pain at the site of the construction.

Interpretation of the Ventriculograms. The interpretation of the film, depicting the size and shape of the ventricles, is of the utmost importance. The best description found in the literature and one that covers all points is by Bingel as follows: "The anteroposterior film, butterfly-like figures appearing in the mid-field, are the lateral ventricles, very clear in the upper and lateral parts, less clear in the lower part. The boundary corresponds to the surface of the large ganglia, and this line shows in the middle a peak directed upward, corresponding to the choroid plexus at the boundary between the corpus striatum and the optic thalmus. In the middle between the lateral ventricles, the septum pellucidum projects; below this spreads a part corresponding to the columnae fornicis. Below this angle lies the long oval clear space of the third ventricle, whose cleft lower part corresponds to the optic recess and infundibulum. The fourth ventricle cannot usually be seen. Against the lateral lines of the butterfly frequently rests a clear half-moon, the frontal recess of the lateral ventricles. Laterally and downward from the butterfly wings lies a clear triangle, corresponding to the pars centralis of the lateral ventricle. In the lateral parts of the encephalogram the brain convolutions can be seen, especially the longitudinal fissure. The lateral pictures show the descending pars centralis, trigone, posterior horn and inferior horn; in the periphery the convolutions are seen."

In making use of the study one must bear in mind that the presence of edema of the optic nerve has a direct relationship to the presence of congestion and edema of the brain or to a local retardation of venous circulation; that only in certain conditions is it directly associated with increased cerebrospinal fluid pressure. On the other hand, one must remember that the cerebrospinal fluid circulation is a distinct entity and is related directly to the intracranial pathology. When either by direct mechanical pressure or by obstructive resorption the volume of fluid is displaced or actually increased, changes in the pressure are noted first, followed by changes in the shape or size or position of the ventricles.

The cause of choked disc and the degree to which the cerebrospinal fluid enters the problem are still questions which require much experimental and clinical study. A survey of the literature fails to reveal the proper clinical data upon which cases are reported so that this problem may be cleared. One author reports a series of cases of choked disc due to ethmoiditis, another to perisinusitis in mastoid disease, another to brain tumors, another to encephalitis. Bolton, in a comprehensive survey, accounts for the presence of choked disc in seventeen distinct diseases including the following: brain tumors, hydrocephalus, infectious processes, trauma, hemorrhages, angioneurotic edema, sinus thrombosis, embolism, multiple sclerosis, syringomyelia, Basedow's disease, la grippe, encephalitis, lead poisoning, migraine, tuberculosis of the meninges, syphilis, eclampsia. In none of the reported cases that I have been able to review has an attempt been made to ascertain the relative association between a definite lesion and the ocular, spinal and cerebral findings. That the cerebrospinal fluid is the connecting link in this study seems at least a possibility.

From the studies of Becht it would appear that under normal conditions the amount of cerebrospinal fluid remains fairly constant; that there is a definite cerebrospinal fluid circulation; that drugs causing congestion or anemia of the brain do not alter the amount of cerebrospinal fluid, but either force the fluid outside the cerebral cavity or suck it into the cavity as the case may be. That the cerebrospinal fluid is derived from three sources is the contention of Burton Opitz, viz., (1) secretion into the ventricle from the choroid plexus, (2) by transition into the subarachnoid and subdural space, (3) by transfer from the intraadventitial lymphatic spaces of the cortex. Mestrezat concludes that the fluid is the product of a natural dialysis of the blood; it is neither a true secretion nor a basal transudate.

Dandy has shown in his experimental work on hydrocephalus that the fluid is chiefly formed in the lateral ventricles, chiefly by the choroid plexus; that it then passes thru the foramen of Monro into the third ventricle, then thru the aqueduct of Sylvius to the fourth and outward via the lateral foramina of Luschka to the cisterna and via Magendie to the spinal canal, whence it goes to the cisterna and thence outward under the arachnoid to be absorbed via the pacchionian bodies and venules into the venous circulation. Experiments by others have demonstrated this to be approximately the true circulation. The normal pressure of this fluid as taken in the prone position varies from 4 to 10 mm. of Hg.; in the vertical position about 25 per cent higher, or 5 to 12.

Zylberlast-Zand, in an article on modification of pressure of the cerebraspinal fluid, state that: "Flexion of the head on the chest in the horizontal position always raises the pressure, while in the ventricular position it lowers it. The increase seems to be due to an artificial venous stasis. The vessels of the neck or not compressed in flexion of the head occurring in the vertical position; in fact, the venous circulation may here be facilitated. Increased pressure in the vertical position may, however, be obtained if the head is flexed very strongly. Pressure of the cerebrospinal fluid is increased by movements, cries and excitement."

Stewart, in an article reviewing the work of Becht and others, concludes that: "Since the brain is incompressible and enclosed by the bony calvarium, any alteration in the venous and arterial pressures within the skull is bound to exert a marked effect upon the cerebrospinal pressure and consequently alter the rate of its escape. Hemodynamic drugs, most of which are described as having a stimulating effect upon the formation of fluid, may mechanically force out cerebrospinal fluid and lead to a wrong interpretation of increased formation. It is essential in all experiments to measure arterial and venous pressures within the skull. The slightest degree of constriction of the large veins of the neck leads to an immediate and marked rise in pressure of the fluid (Quickenstedt phenomenon). Becht and Matill showed very convincingly that in every case after the injection of tissue extracts, where there was a decrease in venous pressure within the skull, the fluid pressure also fell; and an increase in venous pressure was accompanied by increase in fluid pressure."

From the above review of the recent literature on the subject it would appear that the following are definitely established facts upon which future studies may be based:

(1) The amount of cerebrospinal fluid is fairly constant under normal anatomic conditions (Becht). (2) The cerebrospinal fluid pressure under definite postural conditions varies but little under ordinary circumstances (Zylberlast-Zand). (3) Absorption of fluid is nearly all accomplished outside of the ventricular system (Dandy, Jackson). (4) A rise in pressure of the spinal fluid may not necessarily mean an increase in the amount of fluid, but merely a forcing outward of the fluid normally contained within the ventricles (Becht and Stewart). (5) An increase in the actual quantity of fluid may be caused by a decreased absorption with normal formation (obstruction, mechanical) or an increased formation with normal or decreased absorption (inflammatory). (6) Hydrocephalus, obstructive, has been produced experimentally by occlusion of the aqueduct of Sylvius (Dandy).

With the above facts fixed in one's mind, let us conjecture somewhat upon the possibilities of the role played by the cerebrospinal fluid in disease. Dandy by occluding the aqueduct of Sylvius produced hydrocephalus. Suppose the inflammatory process in meningitis of the base, as seen in lues, should cause a thickening of the basilar mat, as indeed it may and does in more acute conditions (Stone and Swift, Journal A. M. A.), may not the absorption be retarded while the formation remains constant, thus causing an enlargement in the ventricles? Taking this as the illustration the following hypothesis is submitted.

Any increase in the actual pressure of the cerebrospinal fluid above the upper normal limits, not due to postural conditions, must either be the result of a displacement of the cerebrospinal fluid within the ventricles and consequently a contraction of the size of the ventricles of the cerebrum; or due to an actual increase in the amount of cerebrospinal fluid without any change in the size of the ventricles but possibly a change in the shape; or due to an actual increase both in amount of fluid, and size and shape of the ventricles. Further, a normal cerebrospinal fluid pressure could not be associated with an abnormal amount of fluid or enlargement of the ventricle, because to change the shape would require definitely increased pressure.

That this hypothesis is true can easily be shown in the cerebroventricular study with the use of air. Slides will demonstrate the fact in lues, where irregular shaped outlines with enlarged ventricles and higher pressure are fairly constant. In epilepsy of various types the ventricular shadow is increased in size and the pressure higher than normal. In tumor the ventricles are changed either by compression at site of tumor, occlusion of the ventricles with subsequent dilatation, or complete displacement to one side as in some cases shown.

Again, that choked discs may occur without any change in the pressure of the cerebrospinal fluid is true. Such cases studied comprised angioneurotic edema with choked discs, signs of cerebellar pressure, as abscess, cyst or tumor, with normal cerebrospinal fluid pressure of 8 mm. Autopsy revealed the true caûse (Plummer case). A case of bilateral choked disc with all tests showing cerebellar symptoms but a spinal fluid pressure of 8 mm. Hg. was shown at autopsy to be due to a tuberculous kidney and general miliary tuberculosis of the mesentric glands with a normal brain (Winslow case). Encephalitis lethargica may or may not change the ventricular shape but usually increases the pressure and shows edema of the discs. In general edema of the brain there is always edema of the discs (choked); in tumors, choking does not occur until after circulatory disturbances occur, causing a general edema, hence the value of decompression operations. The pressure is released from the circulatory system and then the general edema subsides. This is especially true in cerebral lesions, where the pressure is under the vein of Galen and laterally against the sigmoid sinus, causing a general edema with choking. The spinal fluid pressure usually rises with the general edema, not because of increased amount but because the fluid is forced outside the cranial cavity into the spinal canal.

Hence, one may further postulate: Increased spinal fluid pressure may be associated with edema of the brain only when such edema causes a true displacement of the fluid normally occurring in the ventricles, cisterna and subarachnoid spaces. The amount of such fluid has not increased and is not forced along the sheath of the optic nerve, causing choked disc. Further, choked discs are evidences of general cerebral edema, not of increased cerebrospinal (ventricular) fluid, and occur in brain tumors only after the tumor presses upon the return venous passageways, either at the base or early in cerebellar cases against the vein of Galen, and the lateral sinuses. Choked disc with high spinal fluid pressure is not indicative of dilated cerebral ventricles; it may or may not be associated with any change in the ventricles. Atropin poisoning may cause pressure without the change in the ventricles because of its acute onset.

A case of abscess of the brain illustrates this point also, a man having abscess following mastoiditis. The spinal fluid pressure was 55; air entered only one lateral ventricle (which also was displaced); the ventricle on the side of the abscess was collapsed; the fundi did not show choked discs, tho the veins were distended; the physiologic cup was deep and free from edema or exudate on either side. Operation revealed (1) presence of a large abscess in the temperosphenoidal lobe on the side of the collapsed ventricle; (2) a dry subdural and subarachnoid space on the side of the abscess. What had happened was a displacement of the cerebrospinal fluid into the canal. Later a secondary edema would have developed with a true choked disc (Davies case).

A second abscess case which had developed a marked choked disc also had a pressure of 55. Here the entire cortex was edematous and the abscess very extensive. This would demonstrate the fact that the choked disc is associated with edema of the brain and not to increased volume of cerebrospinal fluid (Kelton case).

CONCLUSIONS

1. Cerebroventricular studies must be used in intracranial lesions to avoid mistakes in diagnosis.

2. The ocular manifestations of the study are chiefly confined to the presence or absence of choked discs.

3. Choked discs mean general cerebral edema or local obstruction to ophthalmic venous outflow either local or general.

4. Spinal fluid pressure estimations are essential to the study and have no direct relation to the ocular findings except thru the medium of the cerebrospinal fluid.

5. The amount of cerebrospinal fluid is shown by the size of the ventricles as depicted by the air in the ventriculogram.

6. Inflammatory lesions increase the amount without necessarily obstructing the circulation of the cerebrospinal fluid, but probably by retarding the absorption.

7. Tumors change the size and shape of the ventricles by pressure, physical displacement or occlusion of the outlet of the fluid, but do not increase the amount except by prevention of the normal circulation of the cerebrospinal fluid.

8. Tumors increase the intracranial pressure only when by their size or position they obstruct the venous outflow of the cranium.

9. The reaction to this pressure is first venous obstruction, then cerebral edema, followed by choked

discs and lastly increased spinal fluid pressure by actual displacement of the ventricular and cisternal fluid.

10. Decompression relieves the venous pressure and then the ocular edema. As the ventricles again reform the fluid in the spinal canal recedes and the pressure falls.

TECHNIC

The following technic has proved successful in practically all cases of ventricular study.

1. From the time the first air is injected into the spine do not change the head from the upright to the prone position; slight changes do not matter.

2. X-rays should be taken with the patient in the upright position with the occiput against the plate for anteroposterior films and with either right or left side to the plate for laterals, the head still in the upright position.

3. The set-up for the machine is as follows: Distance from tube to film 25 inches, millamperes 20, spark gap 4½ inches, exposure anteroposterior 11 sec., lateral 10 sec., Superspeed films used.

Using this technic, with especial care to keep the patient in the upright position, will usually give excellent results.

CASES STUDIED

1. Dr. E. O. Jones (Columbus). Diagnosis: Arteriovenous aneurism Rt. cavernous sinus, following skull fracture, basilar. Age, 55. Eyes: Choked right; exophthalmos. Sp. fl. pr.: Slight pressure, not measured by manometer. Outcome: Ligation internal carotid caused decreased sound over temporal area. Eye receded and choked disc gradually subsided.

2. Dr. Eagleson (Seattle General). Diagnosis: Bilateral arteriovenous aneurism, cavernous sinus, following skull fracture, basilar. Eyes: Choked disc, r. and l; exophthalmos, r. and l. Sp. fl. pr.: Not measured. Outcome: Ligation of the carotid artery right side caused recession of eye and edema of disc right. Left still unchanger, tho some recession after several months of edema and exoph. Left eye is blind. R. C. 20/100.

3. Dr. Winslow (Swedish). Diagnosis: Tuberculous kidney. Nephritis. Age, 20. Eyes: Choked disc, r. and l. Outcome: Auptopsy showed edema of brain, general. Millary T. B. of intestines. T. B., caseous, of kidney.

4. Dr. Plummer (Swedish). Diagnosis: Angioneurotic edema. Age, 21. Eyes: Choked discs at times, full r. and l. Sp. fl. pr.: 8 mm. Outcome: Died. Autopsy showed edema of brain general. Atrophy of adrenals, otherwise no pathology.

5. Dr. Beeler (Minor). Diagnosis: Tumor, mesial, parietal. Age, 50. Eyes: Clear until last week of illness, then choked discs. Sp. fl. pr.: 23 mm. Outcome: Died. Autopsy showed tumor, midparietal, size of orange.

6. Dr. Heussy (Minor). Diagnosis: Frontal lobe tumor. Age, 45. Eyes: Clear until last 3 days, then congested. Sp. fl. pr.: 28 mm. Outcome: Died. Autopsy showed tumor left frontal, size of walnut.

7. City Hospital (L). Diagnosis: Angioma, left frontotemporal. Age, 27. Eyes: Clear always. Sp. fl. pr.: 28 mm. Collapsed vent. on one side. Outcome: Died. Operation showed presence of large angioma, subcortical and extracortical.

8. City Hospital (L). Diagnosis: Sarcoma, parietal. Eyes: Clear until 2 days prior to operation. Sp. fl. pr.: 41 mm. Collapsed vent. on one side, dilated and misplaced on other side. Outcome: Died. Autopsy showed tumor size of orange causing ventricular picture.

9. City Hospital (W). Diagnosis: Occipital tumor. Preop. diag., oncephalitis. Age, 50. Eyes: Clear 12 hrs. before death. Sp. fl. pr.: 21 mm. Outcome: Died. Autopsy showed tumor size of walnut, cortical, occipital region.

10. Dr. Torland (Swedish). Diagnosis: Tumor, medulla. Age, 12. Eyes: Edema r. and l. Phys. cup still present, r. and l. Sp. fl. pr.: 66 mm. Enormous distension of ventricles. Outcome: Died following operation which revealed tumor between cerebellum and medulla, size of walnut.

11. Dr. Mitchell. Diagnosis: Tumor. Glioma optic thalmus. Age, 16. Eyes clear. Sp. fl. pr.: Not taken. Outcome: Died. Autopsy revealed tumor of optic thalmus.

N. B.: This case had no symptoms at any time. Suddenly became unconscious and died in four hours. Hemorrhage into ventricles caused death.

12. Dr. A. P. Calhoun (Minor). Diagnosis: Encephalitis. Age, 36. Eyes: choked discs, r. and l. Sp. fl. pr.: 20 mm. Outcome: Died. No autopsy.

13. Dr. Thomas (Minor) (Walla Walla). Diagnosis: Lues. Age, 43. Eyes: Clear. Sp. fl. pr.: 20 mm. Outcome: Enormous dilatation of vents. Wass. 4 plus.

14. Dr. Trueblood. Diagnosis: Hydrocephalus. Age, 4. Eyes: Optic atrophy. Sp. fl. pr.: 20 mm. Outcome: Enormous hydrocephalus internal.

15. Dr. Davies (Minor). Diagnosis: Abscess, r. temperosphenoidal lobe. Age, 32. Eyes: Congestion veins. Sp. fl. pr.: 55 mm. Outcome: Died following operation which revealel abscess. Brain: no edema.

16. Dr. Kelton (Seattle General). Diagnosis: Abscess, r., frontal, following electric burn. Age, 34. Eyes: Choked discs, r. and l. Sp. fl. pr.: 55 mm. Outcome: Operation revealed wet brain frontal abscess.

17. Dr. West (Minor). Diagnosis: Septic thrombosis cavernous sinus. Age, 16. Eyes: Choked discs, r. and l. Outcome: Died.

18. Dr. Gray (Seattle General). Diagnosis: Serum sickness. Age, 5. Eyes: Edema of retina. Sp. fl. pr.: 12 mm. Outcome: Given adrenalin and edema subsided rapidly in a few hours.

CASE STUDIES

1. Acute choked discs occur when there is a sudden blocking of the venous circulation, as noted in case 17, a septic thrombosis of the cavernous sinus of forty-eight hours duration; and in the two cases of aneurism of the cavernous sinus, cases 1 and 2.

2. It occurs in some cases of brain abscess and does not occur in others, depending entirely upon the location. In the frontal lobe abscess, case 16, both right and left discs were fully choked with a spinal fluid pressure of 55, while in case 15, with a spinal pressure of 55, the abscess located in the temperosphenoidal lobe, there was merely congestion of the veins in each eye. In this particular case there was no pressure on the return venous flow, while

there was a generalized edema in case 16, which accounts for the choking. Case 15 would have gone on to full choking in all probability at a later date.

3. In nephritis, as in case 3, a full choked disc developed in each eye. There was a general cerebral edema in this case. The same is true in case 4, an angioneurotic edema, which would at times show edema of the brain, in which case a full choked disc would develop, at other times edema of one leg or of the face. A similar case, altho not so pronouncedly choked, was that of case 18, a child with edema of the prepuce, face (especially the eyelids), and brain, unconscious, a spinal pressure of 12 mm. Hg. and increase in the cell count. This condition followed the injection of vaccine for whooping cough in a child who had previously been asthmatic. The edema of the brain subsided promptly upon the use of adrenalin. In one attack of the previous case of angioneurotic edema, with edema of the brain, adrenalin also relieved these symptoms. This would demonstrate the point that in a general edema of the brain there is an associated edema of the retina and optic nerve without necessarily an increase in the cerebrospinal pressure.

4. In encephalitis, when there is a general edema of the brain associated with increased pressure of the spinal fluid, one may get a typical choked disc. Case 12 illustrates this point. A decompression operation was performed some weeks prior to death and gave temporary relief. The operation revealed an enormously distended subarachnoid space.

5. In lues the pressure may be 20 or more with enormously distended ventricles, but with perfectly clear optic discs. Case 13 illustrates this type.

6. In hydrocephalus with normal or slightly increased spinal pressure, up to 20 mm., the ventricles may be enormously distended and a true optic atrophy from pressure on the chiasm may not show at any stage a true choked disc. Case 14 illustrates this type.

7. Tumors situated in different parts of the brain reveal different ophthalmic changes. Case 5, a tumor situated on the mesial angle of the parietal lobe, did not show any eye changes until the last week of an illness of four months duration; at this time congestion was followed by a sudden choking of both discs. The pressure was 32 mm. Case 6, with a tumor in the frontal lobe, did not show any change until the last three days, when a definite congestion occurred. Case 7, with an enormous angioma causing a collapse of the ventricle on the same side, did not show any choking at any time. This was probably due to the fact that there was no new-formed tissue, in this sense acting like a gumma. Case 8, a sarcoma of the parietal region of enormous size, collapsing the ventricle entirely and misplacing the same, was clear until two days prior to death. Case 9, a tumor situated slightly further behind just in the occipital region, altho not quite so large, showed normal nerve heads until twelve hours before death. Other intracranial symptoms were also obscure until that time. Case 10, with a tumor pressing on the floor of the 4th ventricle and situated in the posterior fossa, showed early changes in the eye, an enormous spinal fluid pressure, 66 mm. Hg., distension of the ventricles, but even at the last no true choking of the disc. Case 11, a tumor of the optic thalamus, gave no symptoms of any sort until four hours before death, when sudden pain in the head was followed by coma, the result of hemorhage into the third ventricle. Pathologic report by Dr. Nickson showed a glioma. Evidently the tumor did not disturb the arteriovenous circulation in any way in this case and the hemorrhage undoubtedly ruptured within the glioma and then broke thru into the ventricle.

This series of tumors, the diagnosis of all of which is unquestionable, some of the eyes of which were examined by two or more specialists who agreed as to the findings, would indicate that extensive changes can take place within the cranium without causing a true choked disc, until the terminal stages when a general edema is present.

CONCLUSIONS

The conclusions one may draw from this study are:

(1) Choked disc does not always mean brain tumor. (2) Choked disc occurs comparatively late in brain tumors. (8) Choked disc occurs early in conditions causing a sudden blockage of the venous outflow from the cranium, no matter what the cause may be. (4) Choked disc occurs always in all conditions, in which there develops a general edema of the brain. (5) Changes in the shape and size of the ventricles occur whenever there is pressure from ithout, as in tumors; (6) whenever there is a partial or complete occlusion of the foramina or passageways thru which the cerebrospinal fluid must pass in its circulation. (7) The spinal fluid pressure is always increased when there is a displacement of the ventricles; also, (8) when there is a greater amount of fluid secreted than absorber, as in inflammatory conditions, lues and encephalitis. (9) There evidently is a difference betwen an edema of the brain with choked disc and an increase in cere-

brospinal fluid, due to inflammatory processes as tuberculosis or syphilis. Clinical work must be done before the acutal relationship is proved (10) Choked disc associated with cerebellar lesions is due primarily to pressure against the vein of Galen and the lateral sinuses. In this group are angle tumors and perisinus abscesses.

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A Physiologic Consideration of the Gallbladder. On the basis of data obtained from his own experiments and from the results of the many carefully conducted researches of other investigators, an hypothesis of a function of the gallbladder has been formulated by Frank C. Mann, Rochester, Minn. (Journal A. M. A., Sept. 13, 1924). He has come to consider the gallbladder as a part of a mechanism whereby the secretory activity of the liver is correlated with that of the gastro-intestinal tract. Anatomically, the gallbladder must be considered a sampling apparatus, in view of the fact that only a portion of the total amount of bile secreted ever enters it. The gallbladder is filled mostly during active digestion. This fact can also be considered as important in relation to the flow of bile and regulatory theories. The sphincter of the choleduct can be readily be considered a necessary mechanism for filling the gallbladder as for preventing the escape of bile into the intestine. The concentrating activity of the gallbladder would imply that some element of the bile is of value, and bile salts, as in the concentration in the gallbladder, are an efficient cholagogue. The most important objection to such an hypothesis is the question concerning the emptying of the gallbladder. Thus far it has not been proved that the gallbladder empties, or, in fact, that it can empty.

TREATMENT OF FRACTURES OF THE SKULL[*]

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Serious injuries of the head are increasing rapidly, perhaps due to the advent of the automobile and its increasing popularity. It is for this reason, rather than with the idea of presenting anything original, that I am talking on this subject.

Modern ideas applied to the treatment of intracranial injuries have materially lessened the mortality in the larger centers of population, and if such treatment be carried out in the smaller centers, a like result will surely follow. It is too early yet to estimate accurately in what degree the late sequelae of jacksonian epilepsy, etc., will be avoided, but that idea has been borne in mind in building up the modern treatment. Too often in the past we have complimented ourselves if our patients recovered from an acute injury, only to be horrified at the appearance of serious sequelae some years later.

The treatment of fractured skull resolves itself primarily into treatment of the accompanying intracranial lesions. I do not wish to leave the impression that the fracture itself is of no importance, but its care requires no interference except in cases of depressed fracture, especially those of the vault, and in those cases presenting open wounds.

It is the treatment of the intracranial lesions that I more especially want to discus, and wish to emphasize that such lesions can be of the greatest severity without an accompanying fracture. In discussing the intracranial lesions, I shall leave out the words "concussion" and "contusion," and use the terms edema, hemorrhage and laceration, all three of which may be present at once.

Edema is the easiest of the three to provoke, and is present in practically all intracranial injuries. Knowledge of physiology of the cerebrospinal fluid is essential for an understanding of the pathology. The cerebrospinal fluid is secreted in the lateral ventricles by the choroid plexuses. It travels thru the formina of Monroe to the third ventricle, then along the aqueduct of Sylvius to the fourth ventricle. From the latter it escapes thru the foramina of Luschka and Majendie to the subarachnoid spaces, and rises from the base thru the incisura tentorii to spread over the cerebrum, from which it is constantly being absorbed by the supracortical veins. The exact causes and rate of its circulation are unknown. The heartbeat, the act of respiration and change of posture have much to do with its circulation. Experimental work has failed to show the exact rate of absorption, but it is obvious that any block, preventing the fluid reaching the supracortical veins, will arrest it entirely.

A slight swelling or hemorrhage of the cerebrum or midbrain blocks the subarachnoid spaces and stasis results. The basal cisterns become full and all the ventricles enlarge. Thus the brain is submitted to pressure from all directions, and a dry and flattened cortex results. Eventually the medulla suffers from the pressure. This is a description of the common wet brain, associated with cranial injuries.

At autopsy we sometimes find a different picture. While the convolutions are flattened and the cerebral vessels are empty, the cisterns are comparatively dry. In other words, we find a true intracellular edema, the fluid has become tissue-bound.

It is the first type of case that one of several procedures will benefit, either a lumbar puncture, a cistern puncture, a ventricular tap or, under certain conditions, even a decompression with nicking of the arachnoid. This fact probably accounts for the controversy between those who advocate one procedure or the other. Reasons for preferring lumbar punctures are obvious. Personally, I always feel encouraged, in dealing with stuporous patients, when at lumbar punctures the cerebrospinal fluid flows freely and contains no blood. For those who fear the danger of hernia of the medulla, the alternative cistern puncture or ventricular tap is available.

The second type of edema is always the more serious. There is little fluid to be drawn from any of the subarchnoid spaces, and the brain substance has even encroached upon the lateral ventricles. It is here that the exhibition of hypertonic salt solutions meets the indications admirably.

In the treatment of intracranial hemorrhages, only those from the meningeal vessels and sinuses about the vault can be relieved by operation. All others are treated indirectly by lumbar or cistern punctures. Bleeding from the larger vessels at the base is usually accompanied by a terrific amount of disorganization of the brain itself, and consequently in such cases the hemorrhage is a minor factor.

For the actual laceration of the brain tissue there is no remedy. By a surgical operation we cannot restore the function of a damaged cortex. We can, however, prevent any further destruction of the delicate tissue by immediate relief of pressure, caused by the edema and hemorrhage.

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[*] Read before the Thirty-fifth Annual Meeting of Washington State Medical Association, Everett, Wash., Aug. 12-14, 1924.

In the treatment of head injuries, particularly in those cases that are unconscious, it is well to follow a routine, and depart from it only for special reasons. As the case presents itself, one important point is determined at once, namely, is the patient in shock? Has he a subnormal temperature, and is his blood pressure below 100 millimeters in systole? If so, the head is lowered and external heat applied. External lacerations are gently cleaned, packed if necessary, and sterile gauze applied. If the patient does not immediately begin to improve, fluid is administered intravenously. Nothing further is done until systolic blood pressure has reached 100, when a careful neurologic examination is made, including x-ray films of the skull. A spinal puncture is made, and the pressure taken with a mercurial manometer. If an open fracture is present, debridement and suture is done. When cerebrospinal fluid is seen escaping from the wound, the rent in the dura is sought for and tightly closed. An increase in the intracranial pressure is anticipated by the use of magnesium sulphate by rectum, 2 oz. in 6 oz. of water, remembering that it acts slowly and is to be repeated every eight hours as long as there is occasion for even suspecting that an increase in the intracranial pressure might begin. In the absence of an open wound, if the neurologic signs point definitely to an area in one cerebral hemisphere, that region is explored. Otherwise, the treatment is aimed solely at a reduction of the intracranial pressure, first by lumbar puncture and hypertonic salt solutions. For those cases in which the intracranial pressure continues to rise, especially if the stupor is advancing, a ventricular tap is done.

Personally, I believe that the good done by lumbar puncture in head injuries far outweighs the few deaths that have been attributed to it. It is only the rare case that needs a major surgical operation.

The principles of treatment of head injuries can be embraced under three headings:

1. Prevent infection in open wounds and treat shock.
2. Relieve intracranial hypertension.
3. Operate only when the signs point to a definite localized area of the cortex. At present injuries to the base of the brain are not within reach of operative surgery.

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ABNORMAL FREQUENCY OF URINATION IN WOMEN. A STUDY OF 250 CASES PRESENTING THIS SYMPTOM*

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Disturbances of urination, of which abnormal frequency is the most prominent, are extremely common in women. It is too much to say that these disturbances are frequently neglected not only by the patient but by the physician, whose attention is generally directed to other conditions or who decides that the patient has a mild cystitis, which will respond to internal medication or perhaps to bladder irrigations.

It must be borne in mind that increased frequency is a symptom of varied pathology in the urinary tract, sometimes of minor importance, but more often of prime importance and only infrequency, as our statistics will show, indicates a generalized cystitis, the diagnosis so often taken for granted in its presence. Both the patient and physician are doomed to disappointment unless an exact diagnosis is made, despite the temporary relief that may follow treatment applied without thoro examination, for often the improvement is only one of the periods of remission, so common in urinary disturbances.

In a large number of the cases presented in this study, the history of increased frequency was obtained during the examination for other conditions for which the patients presented themselves. This does not imply that the symptoms were so mild or undisturbing that the patient did not seek relief. On the contrary, questioning revealed that the dysuria had existed so long and that numerous treatments, chiefly bladder irrigations, had given so little relief that the patient considered the condition irremediable and one of the ills to which women are heir, to be borne as patiently as possible.

That there is some justification in this attitude is shown by the fact that the average duration of the symptoms was 7 years, the longest period being 35 years, and in numerous cases the frequency had existed for from 10 to 20 years. In a large majority the disturbance was constantly present in varying degrees of severity with periods of exacerbations. In others it was intermittent with either frequent or infrequent attacks. In a few the condition was exaggerated during menstruation.

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*Read before the Thirty-fifth Annual Meeting of Washington State Medical Association, Everett, Wash., Aug. 12-14, 1924.

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Frequency occurred alone as a symptom in 20 per cent of the cases. In the others, altho it was nearly always the most prominent and annoying feature, it was associated with such symptoms as dribbling, sense of incomplete emptying and hematuria. By far the most common combination was frequency, urgency, burning and pain on urination, producing the symptom-complex of vesical tenesmus.

Frequency was found to exist most often between the ages of 30 and 40, substantiating the observation that is more common during the period of sexual maturity, and when the child bearing functions are most active. From this peak the number of cases diminish as either extreme of life is approached.

The onset in by far the largest number was gradual and in about half of the cases could be definitely traced by the patient to some event or condition which were, in their order of frequency, pelvic operations, labor, pregnancy, gonorrhea, passage of catheter, acute infectious diseases, especially influenza, puerperal sepsis, passage of renal calculus, falls, operations on the kidney, renal colic and furunculosis of the face. Of these the infections and traumatisms subsequent to pregnancy, labor and pelvic operations constitute the starting point of the dysuria in a large majority.

Before proceeding to the findings it may be well to outline the routine steps of procedure in an examination of the urinary tract in women. In addition to the usual general physical examination the following routine is essential:

1. Examination of the external genitals. This is done before cleansing so that any discharge may be noted and a smear made. Special attention is paid to the external meatus which, as in the male, is the mirror of the urethral mucous membrane and often gives a clue to the pathology therein.

2. Catheterized specimen of urine. The voided specimen, in the female, is apt to give confusing information from vaginal contamination. Microscopic and bacteriologic study of the catheterized specimen has greater diagnostic value than the chemical. Special attention is paid to the amount of pus and the presence of organisms. A stained smear and cultures are always made.

3. Following the catheterization the bladder is filled with boric acid solution and the urethra calibrated with bougies and sounds. This reveals the presence of constrictions, indurations and tenderness. The urethra in the female receives little attention in usual diagnostic procedures, yet it is an organ of great importance in the pathology and symptomatology of urinary affections in women. Often the source of urinary disturbance is looked for in the bladder when the urethra is the chief offender. To emphasize this point I take the liberty of quoting from Osgood, in Cabot's Urology: "The urethra is often overlooked or disregarded in the mechanism of urination, when its importance is paramount. Every complaint of painful urination should focus the attention of the investigator upon the urethra as the seat of origin of this symptom. Abnormally frequent urination points to a disturbance of the sensory nerves ('sense of titillation') in the grasp of the internal sphincter, which induces a dilatation of this muscle and a reflex contraction of the bladder musculature. All treatment for the relief of abnormalities of the function of urination must take into account the anatomic structure of the urethra with the muscles which surround it and the physiologic action of these structures. The function of urination is usually ascribed by physiologists to the bladder, so that clinical application of these physiologic studies leads not uncommonly to the ascribing of all changes of this function to abnormalities in the bladder itself, while the all important urethra is forgotten."

4. Following the passing of the bougie or sound, the urethra is palpated thru the vagina to determine areas of induration, fixation and tenderness. The base of the bladder is then palpated thru the anterior vaginal fornix, the ureters thru the lateral fornices and a bimanual gynecologic examination completed.

5. A cystourethroscopy is done at this or a subsequent examination, depending on the circumstances. The importance of a urethroscopic examination should be emphasized, for cystoscopy alone will often miss the underlying pathology or urinary disturbances.

6. If indicated by the findings, a thoro examination of the upper tract is completed by x-rays, ureteral catheterization, differential functional tests, wax tipped catheter exploration and pyleography.

The outline given above is not complete in all details and many cases require added study, but the necessity for this will be obvious from the information gained in the course of the examination. Few diagnoses will be missed, however, thru lack of thoroness, if some such routine is consistently followed.

The findings in the cases under consideration will be given in the order of steps of the examination.

1. The urine: This in 95 per cent of the cases contained pus in various amounts, and organisms were found in the fresh specimen and by culture in 60 per cent. Contrary to the usual statistics of urinary infection in women, only one-half of the positive cultures showed colon bacilli, staphylococcus and streptococcus being present, either alone or in combination in 42 per cent of the cases.

2. The urethra: Confirming the observation that the urethra plays an important part in the symptomatology of urinary affections in women, chronic urethritis was found in 175 cases. This condition was more frequently met than any other save pus in the urine It was nonpurulent in that it was difficult to demonstrate an exudate, the diagnosis being made on the urethroscopic picture.

The urethra, especially in the juxtavesical portion, is usually sensitive, resits instrumentation, bleeds easily and shows a soft infiltration. The mucosa may resemble granulation tissue, giving rise to the term granular urethritis. As in long standing inflammations of mucous membranes elsewhere, fibrosis and contractions frequently occur. In 28 instances this was so severe as to be designated stricture, a condition which is being more frequently recognized in the female.

The diameter of the normal urethra averages eight mm., corresponding to 24 of the French scale. Any constriction which resisted the passage of a No. 18 French bougie or sound was designated stricture. They occurred almost invariably about the meatus and in the anterior third of the urethra, where the glandular structures are larger and more abundant. In two instances the urethra was so small as to necessitate the passage of filiforms and followers before meatotomy or internal urethrotomy could be performed. These latter procedures were necessary in one-third of the cases of stricture. The remainder responded to dilatation. The external meatus showed changes in one-half of the cases, chiefly edema, ectropion and caruncle.

As additional evidence of the urethral infection, polyps were present in 62 cases. They are not only the result of infection, but after their formation by their irritating effects are a potent factor in its continuation. Urethroscopy is necessary for their recognition for they invariably arise in the urethra just distal to the vesical neck, and are apt to be missed during an ordinary cystoscopy.

In the presence of such a large number of chronic urethral infections it becomes important to determine their cause. Naturally one thinks first of gonorrhea, but in only 16 cases could this be definitely assigned as a cause. The percentage must be larger, but it becomes difficult after several years to identify a urethral infection as being gonorrheal in its origin. The gonococcus disappears or undergoes involutional changes and secondary invaders appear, especially the staphylococcus and the streptococcus. Undoubtedly many of those cases who attributed the onset of their symptoms to pelvic operation had gonorrhea, which probably was the cause of the pelvic pathology also, yet adding these, there remains a large number of infections which are nonspecific.

Many of these were ascending infections, so-called, and were the result of the traumatism of labor, especially prolonged or instrumental delivery, of the passage of a catheter, for the so-called catheterization cystitis is more often a catheterization uretheritis, and from falls. Many others were the result of a descending infection from the kidneys, the condition localizing in the glandular structures of the urethra. We are coming to recognize the relation of many obscure urethral infections, as well as upper urinary tract lesions to focal infections.

In ten cases the onset of their urinary infection could be definitely traced to influenza or some of its complications, especially sinusitis, middle ear disease, etc. In two instances it followed severe furunculosis of the face.

3. Bladder: On cystourethroscopy, to which each case was subjected, the outstanding feature was the association of a trigonitis, with the before mentioned urethritis. It was present in 159 cases. Distinction was made between trigonal hyperemia, which is a mechanical circulatory disturbance frequently associated with pelvic disease, and a true trigonitis, which is inflammatory. The typical picture consists in a general redness of the trigon, the vessel markings being obliterated. There is associated an edema, which may be either diffuse or discrete. Frequently the trigon is studded with small cystic elevations, giving it a granular appearance. It is infiltrated, stiff, extremely sensitive and bleeds easily. Eight cases in this series showed hypertrophy and elevation of the trigon, with trabeculations, due to a labor hypertrophy of the muscularis, the condition so commonly seen in obstructions of the vesical neck in men. There is usually associated an edema of the vesical neck in varying degrees. The rest of the bladder is negative. In only 15 cases was there present a generalized cystitis, either acute or chronic, altho this is the diagnosis that is usually made when these cases are referred.

In 7 instances the frequency was due to vesical tuberculosis, in 2 to simple ulcer, in 2 to a Hunner ulcer, in 2 to carcinoma and in 1 to benign papilloma.

4. Kidneys and ureters: Disease of the upper urinary tract was found to exist in over one-half of the cases. Pyelitis, either unilateral or bilateral, predominated, associated with the factors that contribute to urinary stasis, such as ptosis of the kidney, hydronephrosis and ureteral stricture. This latter condition was present in 15 cases, a diagnosis being made only when there was ureteral dilatation as demonstrated by ureterograms and a definite obstruction to the wax bulb catheter. Renal tuberculosis was present in 8 cases, nontuberculous pyonephrosis in 6, stone in 3 and tumor once.

It is not my intention to discuss these conditions, but merely to call your attention to the fact that in 31 of the 128 cases of renal or ureteral disease frequency of urination was the only subjective symptom. This emphasizes the observation that the bladder is the vocal organ of the urinary tract, and that severe renal disease may exist without any other indication of its presence than disturbance of urination.

The analogy has been aptly drawn between the stomach and the bladder as organs of expression, the one for abdominal pathology, the other for urinary. You are familiar with the prominent part that gastric symptoms may play in extragastric pathology, especially chronic gallbladder or appendiceal disease, sometimes masking the picture and leading to pit-falls in diagnosis. The bladder plays the same role in the urinary tract and frequently is the object of much solicitous and ineffectual treatment, when it is simply indicating disease higher up.

Another interesting observation is that in 16 of the cases with disease of the kidney and ureter frequency was a prominent symptom without any demonstrable bladder changes. It is a well known fact that one of the earliest indications of renal tuberculosis is frequency of urination and that this may occur without any gross changes in the bladder. The frequency is attributed variously to an irritating urine, reflex disturbance or abnormal ureteral peristalsis.

5. The genital tract: The proximity of the lower urinary and the genital tract in women gives rise to a relationship in the etiology and symptomology of the disease of both tracts. The close contact of the external urinary meatus with the vaginal outlet permits direct bacterial invasion of one tract from the other. The anastomoses of the vesical, uterine and vaginal arteries make the bladder prone to mechanical circulatory disturbances from pelvic disease. Direct contact with the bladder of pelvic tumors, inflammatory exudates or the pregnant uterus may give rise to bladder disturbances. However, the bladder is an adaptable organ and not every encroachment upon it gives rise to symptoms. Often cases of uterine fibroids and uterine anteversion are seen which show on cystoscopy encroachment on the bladder without producing any urinary disturbances. It seems that these are more apt to follow when the pressure is so situated as to produce vascular obstruction, venous stasis and secondary trigonal hyperemia.

Twelve cases of this series were of this type, the symptoms being directly attribuable to pelvic disease, since the only change in the urinary tract was a trigonal hypermia. One case could be accounted for only by a marked arteriosclerosis of the pelvic vessels, with pronounced varicosities of the trigone. In 23 instances frequency was the result of the bladder changes consequent to a cystocele. The sagging of the bladder results in urinary stasis with infection and the condition has been likened by Bugbee* to prostatism in the male. The majority of these patients, in addition to their frequency, complained of a sense of incomplete emptying of the bladder and had a residual urine of various amounts. On cystoscopy there was noted relaxation of the vesical neck, associated with urethrotrigonitis.

From a consideration of the foregoing cases it is evident that increased frequency in a large majority is the result of a definite pathologic entity, a uretrotrigonitis, "more a urethral than a vesical affection."

Urinary infections to which women are especially prone, due to the exigencies of the sexual life and the child-bearing functions, tend to localize in the urethra and trigon, and this local condition may be the only indication of a previous more extensive infection, involving the kidney and ureter, which has cleared up, or which lies dormant to flare up on sufficient cause.

In emphasizing urethrotrigonitis as an entity, it is by no means intended to ignore the occurrence of frequency with such general conditions as diabetes, the polyuria of nephritis, a highly acid urine or definite affections, such as urinary tuberculosis, vesical tumor or a generalized cystitis, either acute or chronic, for these and other conditions must be eliminated in making a diagnosis, but their occurrence is relatively uncommon when compared with

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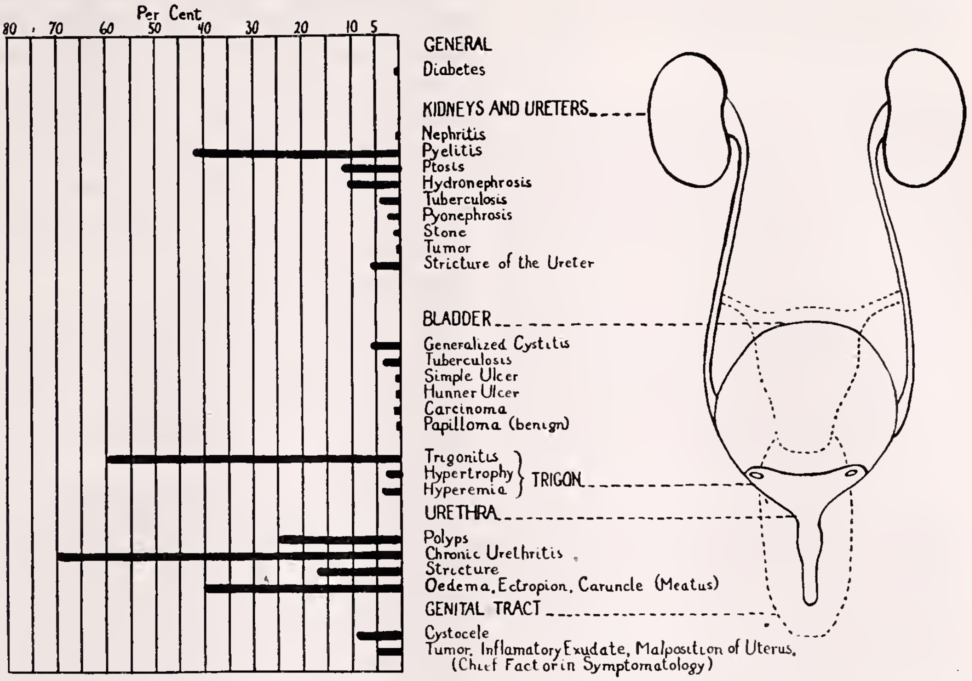
*Bugbee: Frequency of Urination in Women. Transactions Genitourinary Section A.M.A., 1916.

PATHOLOGIC CONDITIONS FOUND IN 250 WOMEN COMPLAINING OF INCREASED FREQUENCY OF URINATION



Graph illustrating the relative frequency of the various conditions present in 250 cases of dysuria.

the great number of cases that are the result of localization of a general urinary infection in the urethra and vesical neck. This idea may be better conveyed by a graphic representation of the pathologic conditions found in this series (see fig.).

TREATMENT

In speaking of the treatment of frequency we, of course, refer to the treatment of its underlying cause. It goes without saying that when pelvic disease is the cause it must be corrected. Weakened and lacerated pelvic floors must be repaired, tumor and inflammatory processes removed and malpositions of the uterus corrected.

In the presence of infection of the upper tract, the sagging kidney must be fixed in place, hydronephrosis repaired by plastic operation or removed and ureteral strictures dilated. These procedures eliminate urinary stasis and, combined with lavage of the renal pelvis, clear up infections in the majority of instances.

This is not the place to go into detailed consideration of treatment. I simply wish to call your attention to the fact that prompt relief can be given these patients by local treatment, directed to the urethra rather than the bladder and consising chiefly in dilatations. Straight sounds or the Kollmans dilator are used, increasing the dilatations two to four numbers at each treatment until No. 30 to 35 French is reached. This simple measure affords prompt relief. The stiff edematous posterior urethra and vesical neck are softened, the spastic sensitive sphincter is relaxed, absorption is promoted and the inflammation subsides. It may be necessary occasionally to apply a 5 or 10 per cent solution of silver nitrate to the trigone and urethra thru the endoscope.

Polyps which are of frequent occurrence must be removed, since they are a constant source of irritation and reinfection. This is best done by fulgeration with the high frequency current, or they may be removed by the cystoscopic scissors and the base cauterized with an electrode.

Strictures are treated by dilatations as in the male. When they are of small caliber or resistant, meatotomy and internal urethrotomy are performed.

CONCLUSIONS

1. Frequency of urination is a prominent, annoying and persistent symptom of disturbances of the urinary tract in women.

2. It is most often an evidence of a urethrotrigonitis which may be associated with other conditions, or exist alone as a definite entity.

3. Urinary infections to which women are especially prone, due to the exigencies of the sex life and child-bearing, tend to localize in the glandular structures of the urethra, and as a result stricture of the female urethra is not uncommon.

4. Frequency of urination may be the only subjective symptom in many instances of affections of the kidneys and urethra, and for that reason every case demands a thoro examination.

5. The application of measures properly directed will give prompt and permanent relief to most of these patients who have suffered for many years.

HYDROCEPHALUS *

J. L. Treacy, M.D.

HELENA, MONT.

The object of this brief paper is not to enter into any great detail of the subject of hydrocephalus, but merely to touch the high points of that condition in connection with a very interesting specimen we are fortunate enough to be able to offer you for your inspection.

Hydrocephalus is defined as an excessive accumulation of cerebral spinal fluid within the brain or its membranes, resulting in the enlargement of the skull. This effusion is serous and is generally confined to the ventricles of the brain itself, altho it may be found in the interstices of the pia mater, in the parenchyma of the cerebrum, or sometimes between the arachnoid membranes and the dura mater.

The etiology of this condition is not definitely established, altho many authorities are inclined to believe that a luetic infection plays a large part. This, however, to the best information attainable by me, has not been absolutely established. It has been observed to occur several times in the children of the same mother. In one case reported by Peter Frank, seven consecutive infants were so afflicted. It is stated that rarely are abnormal conditions found in the mother. The affliction is rare, according to the best attainable statistics, occurring once in about 3000 deliveries.

It is common for anomolies to be present in the fetus itself and in the surrounding parts, especially club foot, rickets, spina bifida and large quantities of liquor amnii. There may also occur, according to Winkle, diaphragmatic hernias, absence of one kidney, etc. The pathology is manifested by a marked enlargement of the skull, sometimes enormous, produced by the pressure of the increasing quantity of the fluid.

The closure of the fontanelles and sutures is delayed, and the edges are separated frequently very widely. The bones of the skull itself become very thin, sometimes resembling parchment. The skull itself is much larger proportionately than the face, the forehead usually being especially prominent. The head in some instances may reach the size of that of an adult individual, and with the exception of those cases in which abnormalities exist, the body of the fetus develops to the size which corresponds to the period of pregnancy, often being wrinkled and emaciated. The quantity of liquid in the ventricles may reach several pints. The head is usually shaped like a wedge, with the base upward. The characteristic deformity, produced by the enormous size of the head, the face and the lower part of the skull surmounted by the abnormally distended vault, is very striking. The eyes are commonly deeply set, and their axis point obliquely inward, so that they appear to be crossed. This deformity is generally hideous because of the prominence of the eyes and the overhanging forehead.

In connection with the pathology of this condition, there is a decided tendency on the part of the mother to rupture of the uterus. It is not rare to find the head measuring sixteen inches and over in diameter.

The diagnosis of such a condition previous to an advanced point in labor is difficult in the extreme. In some instances by careful abdominal palpation this condition may be discovered. A large round tumor situated above the pubes, while the fetal heart tones are distinguished at a point high above the umbilicus, is significant. The abdomen is greatly distended, and the absence of ordinary ballotment may be very pathognomonic. The vast majority of such conditions, however, are discovered only after labor. At the onset of labor in vertex cases, the cervical dilatation, due to the physical confirmation of the distended head, is necessarily very tedious and slow. There is in most instances a proneness to premature rupture of the membranes. A manual examination at this time is most likely to fail to reveal the true nature of the case.

The diagnosis in such instances may be made only after careful palpation of the fetal head itself, for even after the recognition of a large fluctuating mass, it is still necessary to exclude the presence of encephalocele and sacrococcygeal cysts. A breach presentation, however, presents a simpler solution of the problem. In such instances the presence of meningocle, spina bifidia or other abnormalities of the fetus, together with the delay or difficult delivery of the aftercoming head, should lead the accoucheur to suspect such a condition, especially if in the uterus there remains a large mass. Of course, one would consider the presence of a second fetus remaining in the uterus, uterine fibroid or other tumor masses. Here, again, a definite diagnosis is only possible by careful manual examination of the head itself with the whole hand.

The prognosis of such conditions from a fetal standpoint is grave, depending entirely upon the extent to which the condition has continued. Such children, when born alive, generally succumb to

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* Read before the Forty-sixth Annual Meeting of Montana State Medical Association, Helena, Mont., July 9-10, 1924.

either primary or secondary mortality. The survivors in most instances are doomed to hopeless idiocy. The mortality to mothers is not so great in modern obstetrics, rupture of the uterus, as before mentioned, being the serious complication. Chances of successful delivery on the part of the mother is much better in breach than in vertex presentations.

The treatment of such a condition consists in a general way in evacuation of the accumulation of fluid in the fetal head. In many instances the use of the aspirator is desirable, and the French school, headed by Tarnier, believes that the simplest manner in withdrawing the fluid in breach presentations is by a puncture of the spine, and introduction of a catheter into the spinal canal. As a general thing, however, it is my belief that the quickest and simplest procedure is the most desirable in such instances, and that I believe to be an immediate puncture of the fetal head.

The specimen which I am presenting for your inspection was delivered by Dr. Horsky and myself in February of this year, St. Peter's Hospital, Helena.

The mother was a primipra, 34 years of age, apparently in perfect physical condition. She came from out of the city, just at the time of her labor, and permitted us no facilities whatsoever for previous examinations. Her labor was apparently a normal breach presentation, the first and second stages, lasting about four hours. When the breach was born, the meningocle, which you will observe on the specimen, caused me to become apprehensive as to some further abnormality. When we experienced difficulty in extracting the aftercoming head, ether anesthesia was immediately administered, and a full hand examination of the fetal head under careful antiseptic conditions immediately made. The large vault was readily palpated, and in this manner the presence of another fetus or other uterine tumors immediately removed. Punctures were made into the vault, and the fluid evacuated, after which the head was readily extracted. The mother made an absolutely uneventful recovery, and left the hospital before the twelfth day.

AURICULAR PAROXYSMAL TACHYCARDIA. A POSTDIPHTHERITIC COMPLICATION. A CASE REPORT

GEO. H. ANDERSON, M.D.

SPOKANE, WASH.

The frequency of cardiac complications in diphtheria is well known. Clinical evidence indicates that a large proportion of fatalities are due to cardiac failure. Degenerative changes in the myocardium are demonstrable in such fatal cases. Similar changes have been produced experimentally in guinea pigs by intramuscular injection of diphtheria toxin.

With pathologic changes of this type disturbances of rhythm are to be expected. Premature beats, heart block and simple tachycardia are commonly mentioned in the literature, while paroxysmal tachycardia, auricular flutter and auricular fibrillation are mentioned much less commonly.

The following case showed an auricular paroxysmal tachycardia with a rate of 230 per minute. This exceedingly rapid rate had apparently existed about 72 hours before death. It is of interest to note that even with a rate as high as this the ventricle kept pace with the auricle and the rhythm did not change to auricular flutter. As a rule, when the auricular rate becomes 220 or more, the ventricle is unable to keep up and the rate becomes half as fast, the condition becoming an auricular flutter. Had this occurred, the possibility of surviving the attack would have been greater.

Mr. W. M., age 39. Six weeks before the patient was seen by me he had diphtheria. He was extremely ill for two weeks. Antitoxin was used in

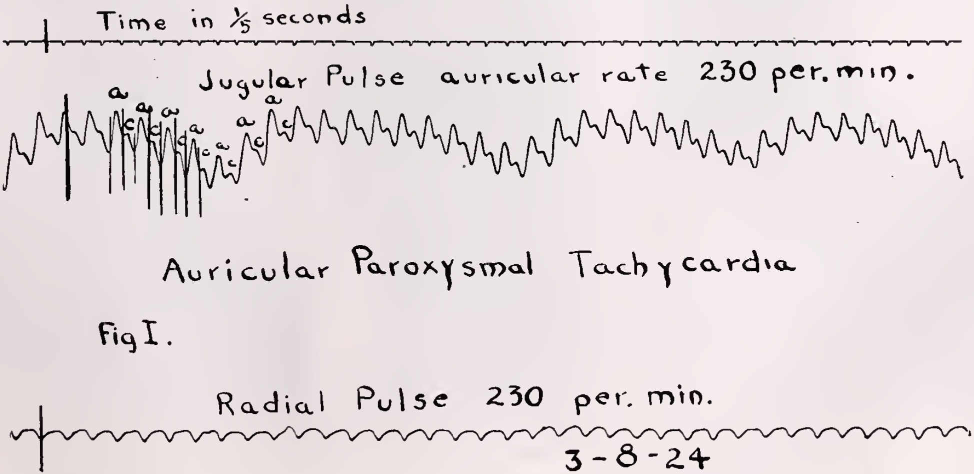

Fig. 1. The jugular pulse shows the "a" waves, due to auricular contractions, and "c" waves but the "v" waves, because of the rapid auricular and ventricular rates, do not appear.

large doses. He was never able to get out of bed following this illness because of marked weakness. Difficulty in swallowing was present from the third week on, both liquids and solids coming up in his nose upon attempting to swallow. About two days before I saw him he noticed a "palpitation", a rapid beating of his heart, with some shortness of breath. With this new symptom weakness became profound.

Examination showed the patient to be very poorly nourished. He was markedly cyanotic and quite dyspneic, altho he was able to lie flat in bed. The heart showed no enlargement to percussion. The rhythm was regular but the heart beat exceedingly rapid. The ventricular rate counted with the stethescope was estimated as being from 230 to 240 per minute. The radial pulse was too feeble to count. No murmurs were heard. There was no enlargement of the liver or evidence of edema anywhere. Except for the heart findings the examination was negative.

The only treatment instituted at the original visit was the placing of an icebag over the precordium and the exhibition of an opiate to insure a good night's rest. The next morning the patient was taken to the hospital, looking somewhat brighter after a good night's sleep, altho the cardiac condition was unchanged. Polygraphic tracing (fig. 1) taken at this time showed an auricular and ventricular rate of 230 per minute. About twenty minutes after the tracing was taken the patient died suddenly when, in attempting to swallow water, he strangled slightly.

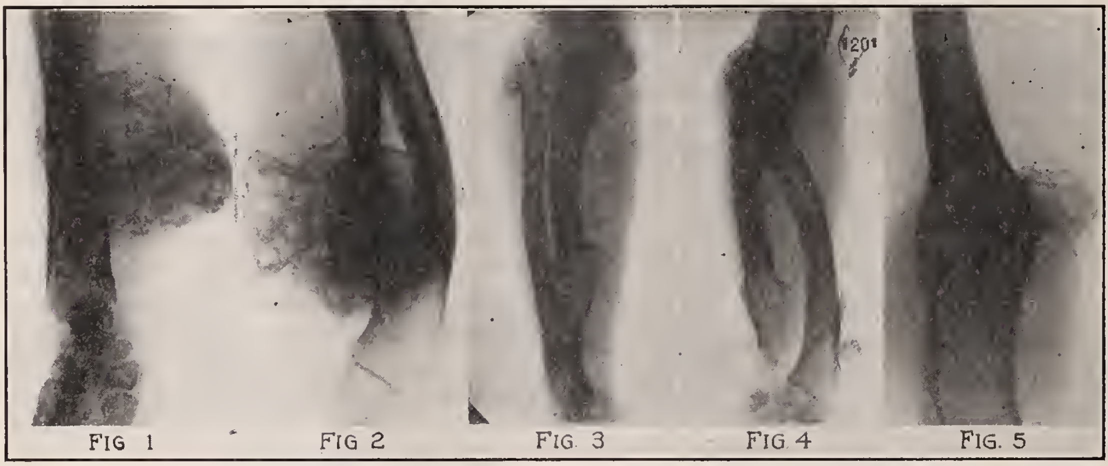

FIG 1 FIG 2 FIG 3 FIG 4 FIG 5

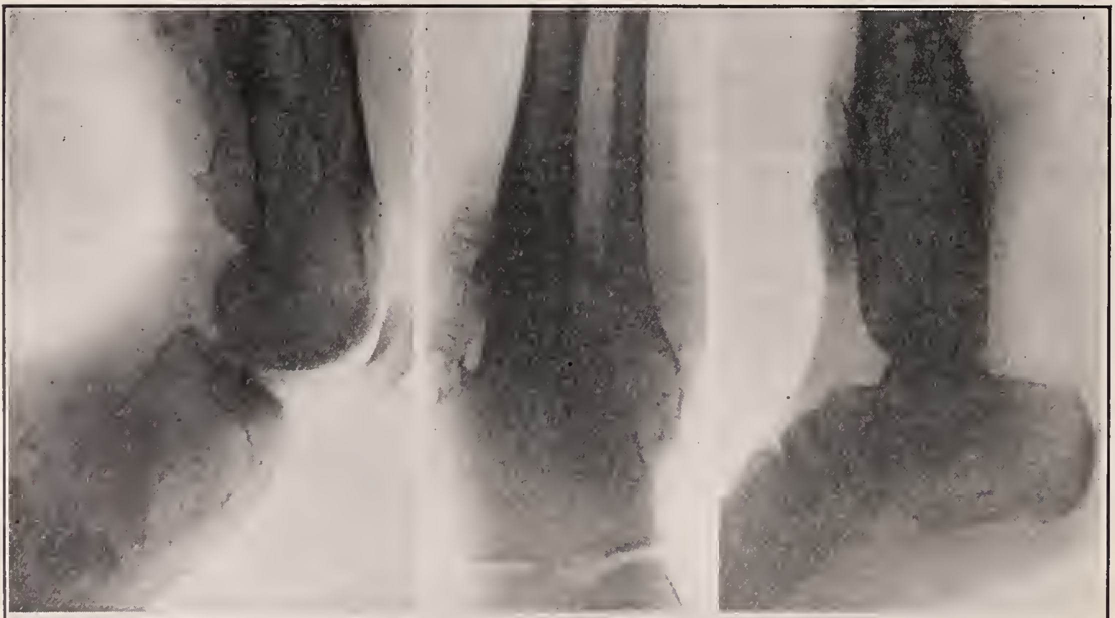

FIG 6 FIG 7 FIG 8

Fig. 1, right forearm; fig. 2, right forearm; fig. 3, left forearm; fig. 4, left forearm; fig. 5, humerus.

Fig. 6, left knee; fig. 7, tibia and fibula; fig. 8, ankle.

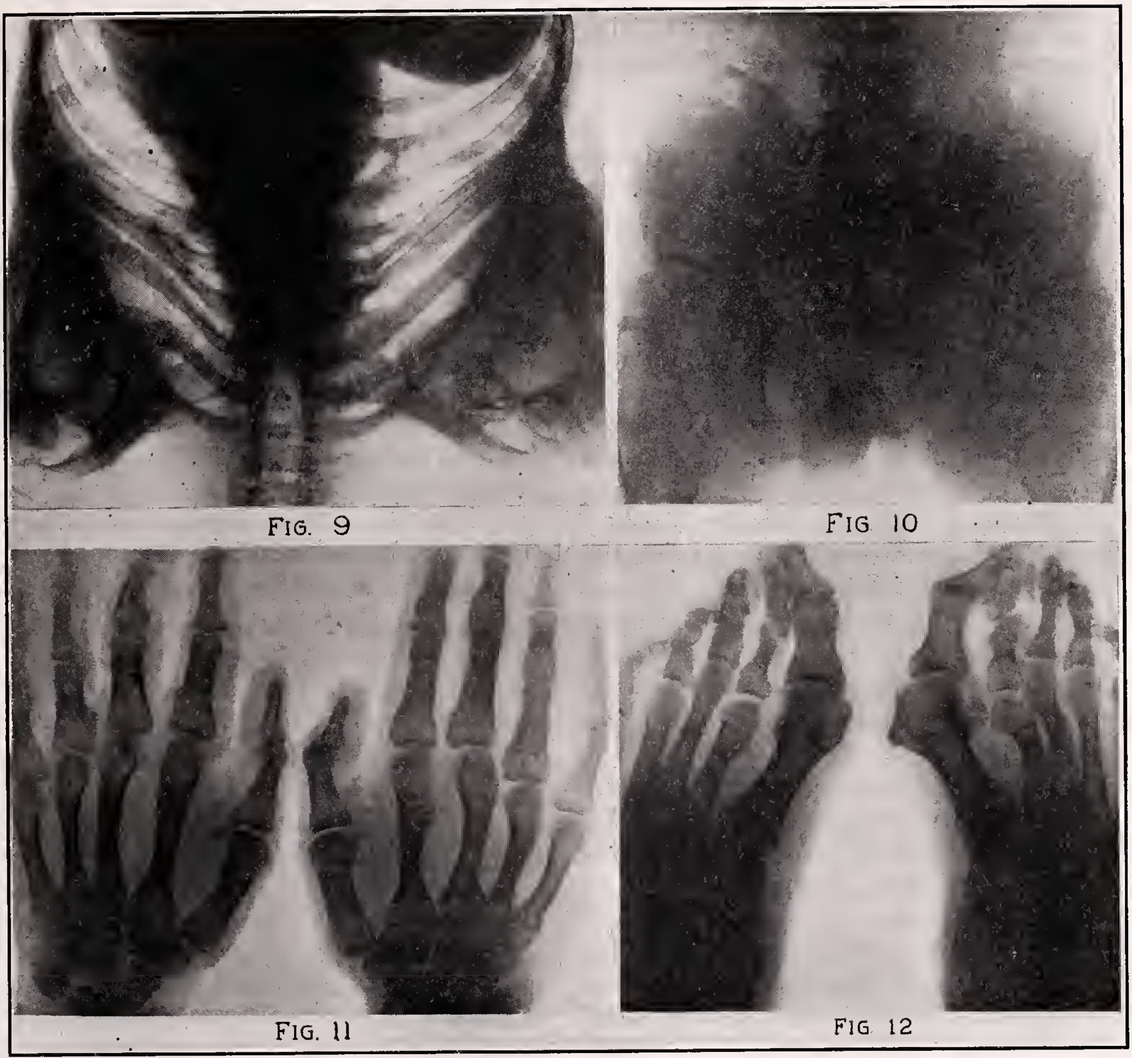

FIG. 9
FIG 10
FIG. 11
FIG 12

Fig. 9, ribs; fig. 10, pelvis and upper ends of femora; fig. 11, hands; fig. 12, feet.

MULTIPLE CARTILAGINOUS EXOSTOSES

Edna E. Christofferson
PORTLAND, ORE.
Member of American Registry of Radiological Technicians

By chance I stopped at an out-of-town filling station and as the boy in charge removed the cap of the gasoline tank, I observed he presented a large "knot" on his left arm. I started a conversation with him concerning the deformity, thinking it might have been a fracture. He stated there were many such knots upon his body and that, altho they interfered with his free action, he was earning a comfortable livelihood.

I saw that he was deformed, and asked him to come to our office for radiographic study. He was quite proud to do so, and appeared the same afternoon. I made radiographs of the most prominent deformities, and dismissed him.

A study of the radiographs revealed the unmistakable condition. Special effort was then made to recall the patient for further examination, and the following condition as illustrated was shown:

There was no complaint of any circulatory, lymphatic or neurotic disturbances, apparently because of compensation. This subject is twenty-three years of age, of a cheerful disposition and energetic. The parents are of an intelligent type and have found no such condition in themselves or any of the grandparents, but have found it to exist only in the five children of their immediate family. The hereditary tendency has been reported many times, and I give this history of the connection merely to sustain the theories already advanced.

I wish to report this case, first, because of the accidental discovery of the boy's condition; second, because of the extensive individual involvement, it having apparently not been recognized before; third, because of the fact that five immediate members of the family present the same condition in a more or less exaggeration. I submit this report merely to enhance the present knowledge of the natural development of pathologic centers of cartilaginous cells in the bony framework.

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EDITORIAL

THE ISLANDS OF LANGERHANS

The acceptance of many of the pieces of work that apparently solve a question, tho they do not prove it absolutely, is one of the great problems of modern medicine. Many of the accepted theories of today are not yet clearly proved. One of them is the general acceptance of the dictum that the islands of Langerhans are physiologically different from the rest of the pancreas. Indeed, the work of Opie and Ssobelow at the beginning of the present century has not been questioned seriously by anyone except Swale Vincent and, perhaps, in an indirect way by Von Noorden. Von Noorden believed that diabetes is dependent upon an increased production of sugar in the body rather than a reduced ability to burn the same, thereby rejecting the theory that the islands produce something that causes the sugar to be burned. What his views are since insulin was discovered we do not know.

We have now before us the enunciation of Prof. Oertel (page ???) that the islands of Langerhans do not represent a separate endocrine entity differing from the pancreas proper. He believes that the island theory cannot be accepted, largely on a basis of the work of Milne and Peters in his laboratory, who come to the conclusions that the islands are part and parcel of the pancreas and not independent structures. Oertel asserts that the islands are in lower animals and man embryonic pancreatic tissue, genetically and anatomically *not* independent.

This throws a peculiar light upon the work of the Toronto group, if it turns out to be true. It would place these men in the position of having arrived at a correct conclusion on false premises, surely not an enviable position to be in. On the other hand, it seems difficult to reconcile Oertel's view with the work of Banting, et al. For example, at one stâge of their work, they were able to extract the substance from the degenerated pancreas only, when only island tissue was available, and again at another time they extracted it from fetal pancreas, before the "rest of the pancreas" had developed. However, the fact remains in favor of Oertel's view that the whole pancreas secretes insulin, in that present day extractions are made from the whole pancreas in much larger proportions than are represented by insular tissue. Nor does the fact that the islands that appear at a distance from the pancreas in fishes yield insulin prove anything. German investigators have isolated insulin from the salivary glands and Collip has extracted a similar substance from plants.

The whole question seems to be thrown into a state of flux by this communication and opens an interesting field for further study. It simply proves that every problem solved throws open a side chain of new questions, often drawing in old ones to be reworked and perhaps reversed. Young men should not hesitate to enter the research field because of a lack of problems. They are greater in number than ever before, for the work of the past thirty years has scarcely scratched the surface.

F. E.

PHYSICIANS SCORE IN WASHINGTON PRIMARY

There have been sessions of the Washington legislature during past years, in which legislation has been enacted inimical to the best interests of public health, due to the influence and votes of legislators who exhibited hostility to facts of scientific medicine. In some instances there were no medical representatives serving, who might have offered their knowledge and influence to have produced different results. Two years ago several well-known physicians were elected, whose presence served to avert the passage of vicious antihealth legislation. At the recent primary election several of these men were renominated, as well as others selected. The Public Health League was an active factor in attaining these results. A brief reference to each of these men will prove of interest to the profession.

Seven of the eight physicians who filed for legislative preference were victorious in the primary contest. Unfortunately Dr. J. H. Sheets, of Buckley, was defeated in one of the Pierce county districts by a close vote. Dr. W. M. Karshner, of Puyallup, was selected as the Republican senatorial nominee in the twenty-fifth district without serious opposition. He was a candidate for renomination, having been elected as senator in 1920. He served in the upper chamber as the chairman of the committee on medicine and surgery, dentistry and pure drugs.

A contest of importance was waged in senatorial district thirteen, where Dr. J. C. McCauley was entered as a candidate for renomination, to represent the counties of Kittitas and Chelan. He was oposed by a lawyer candidate from Chelan county, who made a hard fight for the nomination. Results show that Dr. McCauley scored heavily in his home county and ran neck and neck with his opponent in Chelan. The public health character of this contest was emphasized by the League, and the physicians, dentists, pharmacists and others interested in these issues worked together for the McCauley victory.

In the fifty-second legislative district Dr. V. J. Capron, of Friday Harbor, won a signal victory for renomination. He will have no opposition in the finals, no democratic candidate being listed in opposition. He was chairman of the house committee on medicine and surgery, dentistry and pure drugs at the last session. Klickitat county renominated Dr. A. F. Brockman, of Bickleton. This physician, who served on the important medical committee at the last session, will be given no opposition in the November election. Dr. J. A. Durrant, of Snohomish, led the legislative ticket in the forty-ninth district. This is his first political venture. He will have but little difficulty in getting by the November test. In the twenty-seventh district Dr. G. W. Overmeyer, of Chehalis, made a run-away race for the lower house, but will have some opposition at the finals. In the thirty-sixth legislative district, in Pierce county, Dr. J. B. Robertson, of Tacoma, received the democratic nomination without opposition. He will be hard pressed in the November fourth test, but his personal popularity will undoubtedly make him a formidable candidate.

Of special interest is the result in the first senatorial district, where Senator H. D. McMillen, running for reelection, met signal defeat. His successful opponent was Horace Smith, of Okanogan, an engineer and a graduate of Washington State College, who emphasized his favorable attitude on health issues in the campaign. McMillen boasted of a cultist connection which placed him squarely against adequate health legislation. The League made a decided stand in this district, giving full support to Smith.

THE MODEL MEDICAL PRACTICE ACT

The divergence in the medical practice acts of the different states has long been a subject of observation and discussion. Not only do they vary in details between contiguous states, but there are marked differences relative to the recognition of the modern cults. In some states all comers are accepted and an examining board provided for licensing all the various and curious forms of practitioners, while others are inclined to place restrictions on the new-fangled notions of therapy. At present the movement is being agitated in many sections to provide for a common practice act, under whose provisions everyone treating the sick shall demonstrate his familiarity with the fundamental sciences which are supposed to form the basis of all methods of treating human ailments. If every practitioner is required to prove his knowledge of these basic principles, the method of treating the ills of mankind might well be left to individual judgment.

As an illustration of the fact that loose laws relative to treating the sick may be extended to any form of absurd therapy, the naturopathic bill which is now being urged before the Oregon voters is a case in point. This questionable bill appears to be vicious and most objectionable in its provisions, extending privileges and powers to inefficiently equipped practitioners which would likely prove detrimental to the public good. It is stated that it would probably be declared unconstitutional if adopted. Fortunately it has not been received with any degree of enthusiasm by the mass of voters. Its fate will be decided at the November election, when there is every reason to presume it will be smothered into oblivion.

The pharmacists also have before them a problem due to the discrepencies in the pharmacist's act in the above state. A model pharmacy act is under consideration by the national pharmacy board, which it is hoped may be received with favor in the different states. The Oregon board of pharmacists aims to correct an unfortunate condition which has arisen in that state, by which drugs are handled by all sorts of dealers. In fact, drugs are to be found in grocery stores, candy stores, cigar stores and in combination with nearly all kinds of merchandise. The recommendation and sale of drugs under these conditions, often of an inferior quality, is a dangerous procedure and should be repressed by legislative action. The above are a few of the problems of a medical nature which will be presented for consideration during the next few weeks in the state of Oregon.

THE PHYSICIAN AND THE RENEWAL FEE

In some of the states legislation has been enacted, requiring all physicians to register their names annually with a state official, paying for the same a renewal fee of from one to two dollars. The reasons given for this procedure are that thereby information is always available as to the personnel of the profession, and that their individual locations can be readily identified. There might appear to be some force in this argument, if such a rule were adopted in adjacent states, especially for the identification of unscrupulous and objectionable members of the profession. On the other hand, the query arises why physicians should be singled out for this particular sort of burden, unless the same plan is extended to all of the professions as well as other vocations.

This question is now being agitated in Idaho, where such a personal occupational tax is in force against the doctors, requiring the annual payment of such a fee. Some physicians would not object so much to this imposition, if the money were expended for the benefit of the profession or for the promotion of public health interests, but in practice the money thus collected has simply been added to the general fund to help reduce the general levy of the state. This collection has thus far come so easily that some people are now advocating the levying of a fifty dollar renewal fee for the members of all professions. The whole subject of this sort of registration might well command the attention of the physicians in other states of the Northwest, where such a method of taxation has been under consideration and may soon be presented as a matter of legislative discussion.

DESIGNATED AS OFFICIAL JOURNAL

Since the inception of Pacific Northwest Medical Association, NORTHWEST MEDICINE has functioned as its representative in the publication of papers read before its meetings and in disseminating publicity regarding its annual gatherings. By the action of its board of councillors this journal has been formally designated as the official journal of that organization.

MEDICAL NOTES

WASHINGTON

The Infantile Paralysis Situation. Dr. Turner, state commissioner of health, recently issued a warning to all physicians to be on the lookout for anterior poliomyelitis during August and September, when its incidence is usually highest. Numerous cases of varying degrees of severity have been reported from different parts of the state. While there has been a discussion of closing schools in some cities, this measure has not been put into effect to any extent. This dreaded disease has produced a watchful attitude on the part of most parents and teachers. It is reported a supply of Rosenow's serum is available for the purpose of its study, supplied by the Mayo Foundation.

Hospital Purchased. The Burlington General Hospital, which has been an efficient institution for several years, has been purchased by Mrs. S. C. Scott of that city. Changes and improvements will be instituted which will add to its usefulness.

Addition to Hospital Advised. Firland Sanatorium, at Seattle, for the care of tuberculosis patients, is said to be inadequate for the demands upon it. Dr. McLaughlin, city health commissioner, has recommended the construction of two additional buildings for adults and a children's building for fifty patients, to cost about $80,000. The institution at present has capacity for 160 patients.

Opposition to Hospital Presented. The proposed new hospital at Walla Walla, to be erected by a large group of physicians, has met the customary opposition from the residents in its proposed location. Numerous reasons of the usually selfish nature are assigned for this attitude, with the suggestion that the hospital be transferred to some other site, which would be more advantageous to the protestants as well as to the hospital promoters.

Transfer of Hospital. The Shelton General Hospital, which has been conducted by a hospital association during the past three years, has been leased to Drs. Gage, of Shelton, and Lamson, of Seattle. It is stated that a qualified physician will be permanently located at the hospital, as well as an efficient corps of nurses.

Hospital Leased. The Kelso hospital, which has hitherto been conducted as a private institution by physicians of that city, has been leased to Mrs. Newcomb who will conduct it as a general hospital open to the profession. It has a capacity for 30 patients.

Dr. C. D. Carter, formerly of Thermopolis, Wyo., has located for practice at Longview. Nearly thirty years ago he started in practice at Kalama.

Physician Transferred. Maj. W. D. Judkins, who has been in charge of the Veteran's hospital at Walla Walla, has been transferred to the superintendency of the Veteran's hospital at Helena, Mont.

Elected President. Col. Harvey V. Wurdemann, of Seattle, was elected President of the Reserve Officers Association of Washington at the annual meeting, held at Camp Lewis, Aug. 7.

Dr. Albert McCown, until recently located at Tacoma, has moved to Seattle, where he is established for practice.

Dr. R. S. Meyer, formerly at Ephrata, has located for practice at Orting.

OREGON

Candidate for Mayor. Dr. George Parrish, of Portland, has announced his candidacy for mayor of that city. He has been a resident of the city since 1911 and its health officer for the past eight years. He has been active in many other matters of public interest.

Dr. C. M. Tinney, who has acted for some time as receiving officer for the U. S. Veteran's hospital at Portland, has been transferred to the Veteran's Hospital at Ford Bayard, N. M.

Dr. G. J. Kenagy, who formerly practiced at Albany and has been located for the past four years in Chicago, has returned to Corvallis, where he has located for practice.

Dr. D. G. Clark, who practiced in Harrisburg for several years, left for the purpose of locating in California about six months ago. He has returned and will resume practice in his former home.

Dr. R. H. Mast, who has practiced recently in Portland, has associated himself with Drs. Hamilton of The Dalles. He will continue practice with them for the future.

Dr. F. J. Swedenberg, of Ashland, recently left home for a visit to Europe, where he will be engaged in medical study for a number of months. He will follow postgraduate study in the cities of several countries.

OBITUARIES

Dr. John A. MacKinnon, of Seattle, died July 7 after an illness of two years duration, from ascending multiple sclerosis. He was born in Charlottetown, P. E. Island, in 1857. He received his medical degree from Trinity College, University of Toronto, in 1880. He began practice at Lowell, Mass. A year later he moved to Maysville, Mo., where he entered partnership with an uncle. While at this place, he spent a year in study in Europe. In 1896 he moved to Southern California on account of his health. In 1898 he spent a year in study in London, in eye, ear, nose and throat work. In 1901 he located at Seattle where he practised until the time of his death. He was well known among the profession of this city and was prominent in church work as well as civic affairs.

Dr. John R. Persons, of Seattle, died Aug. 27 from cerebral hemorrhage. He was born in 1876 in Norwalk, Ohio. He graduated from the Ohio Wesleyan University Medical school. After serving as intern in Mercy hospital, he continued his studies at Harvard Medical School. He practiced at Tyndall, S. D., Coupeville and Oak Harbor, Wash. He has practiced in Seattle since 1921.

Dr. A. R. Slatterlee, of Walla Walla, died suddenly Aug. 30, when in apparently good health. He was born in New York in 1867. He formerly practiced in Indiana and located at Walla Walla about two months ago.

Dr. L. C. Neville, of Seattle, died Sept. 1 from disease of the heart. He was born in Ohio in 1863. He received his medical degree from Toledo Medical College in 1889. He located for practice in Seattle in 1890, where he resided until the time of his death. He had a wide acquaintance in Seattle and was well known especially among the older residents of the city.

Dr. Charles A. Betts, who formerly practised in Seattle and Everett, died July 2 at Carry, Pa. He was a major in the United States army, in which service he had been engaged for a number of years. He was well known for many pleasing qualities among the profession of Washington.

Dr. Charles B. Allen, of Parma, Ida., died June 21, 1924. He was born in 1874. He graudated from the University of Colorado School of Medicine in 1905.

Visceral Disease. Bacterial infection of an apparently normal upper respiratory tract without visible alteration in structure, Myer Solis-Cohen, Philadelphia (Journal A. M. A., Sept. 13, 1924), asserts may be the cause of visceral disease. First of all, it is necessary to distinguish accurately between organisms that the subject carries and which for him are nonpathogenic — infestive merely — and organisms that are actually pathogenic for him, and with which, hterefore, he may be said to be infected. This distinction is made by a special method of culture, which is termed pathogen-selective culture. Cohen has used the pathogen-selective culture on 169 patients; as many as fourteen separate cultures having been made on one patient. The inference that growth of a given organism in the whole coagulable blood of an individual indicates susceptibility to that organism, while failure to grow indicates resistance, seems to be borne out by the results in cases of inoculation with killed bacteria, the vaccines consisting chiefly of organisms against which the patient's blood showed little or no antibacterial power. Bactericidal power against given organisms may be developed in animals lacking it through progressive inoculations. Thus, such bactericidal power has been developed in the blood of mice against meningococci; and in rabbits against pneumonococci and against typhoid bacilli and Shiga bacilli, and against the diphtheria bacillus. The portion of the upper respiratory tract least likely, in the absence of disease, to be infected with micro-organisms, pathogenic for the patient, is the nares. Yet, in some cases although apparently healthy, the nasal passages act as a focus of infection. When vaccine prepared organisms obtained from the tonsils fails to remedy an arthritis, one reason may be that it fails to contain organisms from the nose, specifically pathogenic for the patient, which were not present in the tonsils. Bacterial infection of a tonsil pronounced not diseased by a competent rhinolaryngologist is rare, but occasionall ydoes occur. Much more frequent is the presence of a bacterial infection of the tonsillar fossae, from which the tonsils have been removed at a more or less remote period. It is the overlooking of this condition by both rhinolaryngologist and internist that so frequently disleads them. With the extirpation of diseased tonsils, they believe the infection has been removed. The frequent failure of tonsillectomy to relieve the condition for which it was performed may be based on failure to recognize the presence, or an apparently normal upper8vjtqicft. rr persistent throat focus. An infection due to the presence , on an apparently normal respiratory tract, of organisms pathogenic for the patient, because of the absence in the patient's blood of sufficient bactericidal or bacteriostatic power against them, can be treated only developing and increasing in such patient this lacking power.

REPORTS OF SOCIETY MEETIGNS

WASHINGTON STATE MEDICAL ASSOCIATION

MINUTES OF THE THIRTY-FIFTH ANNUAL MEETING OF WASHINGTON STATE MEDICAL ASSOCIATION, HELD AT BIG FOUR INN, BIG FOUR, WASH., AUG. 12-14, 1924.

The thirty-fifth annual meeting of the Washington State Medical Association was convened at the Big Four Inn, Big Four, Washington, August 12, 1924.

HOUSE OF DELEGATES

First Session

The first meeting of the House of Delegates was called to order by the President at 9:00 P. M. On calling the roll a quorum was found present, the following delegates answering to their names: W. A. West, J. R. Morrison, F. H. Brush, C. H. Thomson, J. H. O'Shea, D. A. Nicholson, G. H. Howard, R. J. O'Shea, C. R. McCreery, S. S. Oppenheimer, H. D. Dudley, A. E. Gerhardt, E. W. Young, D. H. Palmer, A. E. Burns, F. T. Maxson, R. C. Plummer, C. E. Hagyard, O. R. Nevitt, H. G. Willard, W. B. Penny, J. R. Brown, H. T. D'Arc, A. P. Duryee, S. M. Langworthy, A. A. Matthews, G. A. Downs, A. E. Stuht, E. W. Stimpson, C. J. Lynch, A. W. Partlow.

It was moved that the minutes of the last annual session be adopted as published. Seconded and carried.

The Secretary stated that it was customary to have the books examined by a certified public accountant on January 1 and July 1 of each year, and that there had been two audits since the last annual meeting.

FINANCIAL REPORT FOR 1923

Jan. 10, 1924.

To The Officers And Members,
The Washington State Medical Association,
Seattle, Wash.

Gentlemen:

Pursuant to engagement I have audited the accounts of the Washington State Medical Association for the year ending December 31, 1923, and as a result thereof, I have prepared and attached hereto the following exhibits:

Medical Association Fund	Exhibit "A"
Legal Defense Fund	Exhibit "B"
Disbursements M. A. F.	Exhibit "C"
Disbursements L. D. F.	Exhibit "D"
Disbursements General	Exhibit "E"
Interest Received	Exhibit "F"
Recapitulation	Exhibit "G"

While I believe you will find these exhibits to a large degree self-explanatory, I might touch briefly upon each, and shall do this in the order in which they appear above.

Medical Association Fund

Receipts from membership dues, amounting to $4136.00 were verified by comparison with the original remittance blanks from the Secretary-Treasurer of the various county societies and found to be correct. Of the 1034 paid memberships, 4 were found to be for 1921 dues; 112 for 1922; 916 for 1923 and 2 for 1924. Thus showing a total membership in good standing for 1923 of 916 members. You will note a credit balance to this fund of $6886.77, an increase of $1885.04 for the period.

Legal Defense Fund

Receipts from subscriptions to the Legal Defense Fund amounting to $3940.00 were verified by comparison with the number of certificates issued and cash receipts entered on the cash book and found to be in agreement therewith. You will note a credit balance to the fund of $4497.84, a decrease of $1489.02 for the period. Total membership for 1923, 396, as against 401 for 1922 and 414 for 1921.

Disbursements

All disbursements as shown by Exhibits "C", "D" and "E" have been made by check, and duly oked invoices are on file or payment authorized by the "By-Laws" of the Association. These checks were examined and found to be properly endorsed and entered in the check register. The General Disbursements Exhibit "E," amounting to $2261.45, has been divided equally between the two funds.

Interest Received

Interest received from Liberty Bonds amounting to $267.49 has been divided equally between the two funds.

Recapitulation

You will note there has been a total of receipts from all sources for this period of $8543.49, disbursements of $8147.47, leaving an excess of receipts over disbursements of $396.02. This added to your January 1 balance of $10,988.59 gives you a balance of $11,384.61 in the hands of your Treasurer at December 31, 1923, which is made up as follows:

Seattle National Bank, open account	$ 1,088.81
Liberty Bonds (at cost)	10,295.80
	$11,384.61

Cash in Bank

This balance of $1088.81 was verified by statement from the depository and no checks issued remained unpaid by the bank.

Liberty Bonds

Par value $10,500.00, cost $10,295.80, were examined and found in tact, all due coupons having been clipped and deposited to the credit of your account, all undue coupons being attached to the bonds. Bonds are kept in safe deposit box No. 9006 at the Seattle National Bank.

Miscellaneous

The following membership dues have been received but subscriptions to Northwest Medicine have not been paid by the Association; Dr. Max Mehleg, Bellingham; Dr. O. L. Adams, Hoquiam; Dr. J. H. Litz, Montesano; and Dr. M. W. Conway, Elma.

I hereby certify that the preceding remarks and the attached exhibits are in agreement with your books and correct in my opinion and show the true status of the two funds as at December 31, 1923, and for the operation of the Association for the year ending that date.

Respectfully submitted,

(Signed) Louis E. Smith,
C. P. A.

Detailed report filed.

July 10, 1924.

To The Officers and Members,
The Washington State Medical Association,
Seattle, Washington.
Gentlemen:

As requested, I have audited the accounts of the Washington State Medical Association for the six months ending June 30, 1924, and as a result thereof, I have prepared and attached hereto the following exhibits:

Medical Association Fund	Exhibit "A"
Legal Defense Fund	Exhibit "B"
Disbursements M. A. F.	Exhibit "C"
Disbursements L. D. F.	Exhibit "D"
Disbursements General	Exhibit "E"
Interest Received	Exhibit "F"
Recapitulation	Exhibit "G"

While you will, I believe, find these exhibits to a great extent self-explanatory, I wish to comment briefly upon each and shall do this in the order in which they appear above.

Medical Association Fund

Receipts from membership dues, amounting to $2804.00 were verified by comparison with the original remittance reports and by correspondence with the Secretary-Treasurer of the various county societies and found to be correct. Of the 700 paid memberships, 1 was found for 1921 dues; 6 for 1922; 39 for 1923 and 654 for 1924ffi 2—1924 dues were paid in 1923, making a total paid membership at June 30 of 656 members. You will note from Exhibit "A" a credit balance to this fund of $8440.34, an increase of **$1553.57.**

Legal Defense Fund

Receipts from subscriptions to the Legal Defense Fund amounting to $1690.00 were verified by comparison with the number of certificates issued and cash receipts entered on the cash book and found to be in agreement therewith. You will note from Exhibit "B" a credit balance to this Fund of $4087.34, a decrease of $410.50 for the period. Owing to the amount of litigation engaged in, this fund has been gradually on the decrease since 1920.

Disbursements

All disbursements, as shown by Exhibits "C," "D" and "E" have been made by check, and duly oked invoices are on file, or payment authorized by the "By-Laws" of the Association. The checks were all examined and found to be properly endorsed and entered in the check register. The General Disbursements, Exhibit "E," have been divided between the two Funds, $1130.35 to each.

Interest Received

Interest received from Liberty Bonds amounting to $223.13 has been divided between the two funds.

Recapitulation

There has been a total of receipts from all sources of $4717.13 for the period, disbursements of $3574.06, leaving an excess of receipts over disbursements of $1143.07. This, added to your January 1 balance of $11,384.61 gives you a total in the hands of your Treasurer of $12,527.68, which is made up as follows:

Seattle National Bank, open account	$ 2,231.88
Liberty Bonds (at cost)	10.295.80
	$12,527.68

Cash on Hand

This balance of $2231.88 was verified by statement from the Depository and found to be correct, after taking into consideration checks issued but still remaining unpaid by the bank.

Liberty Bonds

These bonds were presented for examination and found to be intact. All due coupons had been clipped and deposited to the credit of your account. All coupons not due were attached to the bonds. Bonds are kept in Safe Deposit Box No. 9006, Seattle National Bank.

Conclusion

I hereby certify that the preceding remarks and the attached exhibits are in agreement with the books and in my opinion correct and show the true status of the two funds as at June 30, 1924, and for the operation of the Association for the six months ending that date.

Yours respectfully,
(Signed) Louis E. Smith,
C. P. A.

Detailed report filed.

The Secretary-Treasurer called attention to the fact that it was originally intended that the Defense Fund should bear no portion of the general overhead, but that the auditor does assess a portion of it to the Defense Fund for the reason that the By-Laws do not contain a specific regulation.

He moved, therefore, that the Defense Fund be expended solely for legal expenses in connection with alleged malpractice and that a committee be appointed to investigate and bring in recommendations. Seconded and carried.

The President appointed the following committee: D. H. Palmer, D. A. Nicholson, C. H. Thomson.

It was moved that a committee be appointed to examine the Secretary-Treasurer's financial report. Seconded and carried.

The President appointed the following committee to examine the financial report: A. A. Matthews, A. P. Duryee, H. D. Dudley.

The Secretary-Treasurer read the following communication from Dr. C. A. Smith, editor of Northwest Medicine:

August 13, 1924.

To the House of Delegates,
Washington State Medical Association,
Everett, Washington.
Gentlemen:

I wish to present for your consideration the matter of increasing the subscription to NORTHWEST MEDICINE from one to two dollars. When this matter was considered at the annual meeting a year ago action was deferred in order that it might be brought before the county societies. During the past year it has been presented to all the county medical societies of the state with an explanation as to why this increase had been proposed. Several of the larger societies have taken action approving the increase.

When the Oregon state medical society adopted a new schedule of membership fees a year ago it provided for a two dollar subscription to Northwest Medicine. This amount has been collected during the present year. At its annual meeting in June the Idaho state medical association adopted a resolution providing for this increase, to go into effect in 1925. At its annual meeting in July the Montana association took similar action.

Briefly stated the reasons for proposing the increased subscription are as follows: When the tri-state association was established, in 1909, the subscription proposed was placed at two dollars, but providing the price of one dollar for the members of the state associations which it represented. Since that time the journal has been about doubled in size, the cost of printing and other features in publication have greatly increased. During recent years most magazines and many medical journals have advanced their subscription rates in consequence of the increased cost of publication. So far as I know, there are no other state association journals whose subscription to its members is less than two dollars per year.

The facts hereby presented represent the reasons why the trustees of Northwest Medicine a year ago decided on this increase in the price of subscription and requested the acceptance of the same by the state associations represented by it. You are requested to take this matter under consideration and approve of the increase if deemed just and advisable.

Respectfully submitted,

Clarence A. Smith,
Editor Northwest Medicine.

Dr. H. D. Dudley moved that the first sentence of Article 13, Section 2, read as follows: The annual assessment against each active member of the component societies shall be five dollars. The annual assessment for membership shall be three dollars, and the price of subscription to the journal shall be two dollars; provided that all elections to membership on or after August 1 of each year shall pay one-half the prescribed annual fees, to be pro rated to membership and journal funds.

It was moved that this amendment be laid upon the table for one day.

The following letter from the Seattle Times was read:

August 9, 1924.

Washington State Medical Association,
Dr. C. H. Thomson, Secretary,
Seattle, Washington.

Gentlemen:

In view of your holding your 35th annual session this week, the undersigned believes it to be an appropriate time to submit this request for an endorsement of The Seattle Times' "Health Sense" campaign, which will be tried out in Seattle this autumn. The campaign will consist of ten weekly display notices which will be published in The Times, their purpose being to further public interest in the medical profession and to discourage certain uneducated cults.

No physician's name will appear in the notices and the campaign will be of an educational propaganda nature pure and simple. We feel sure the campaign will be watched with interest by your association and if it is successful, as the concensus of those already approached on the matter leads us to feel it will be, your organization will have available an outlet in the future which does not conflict with any regulations of the profession relative to advertising.

The secretary of your organization has been informed that the association will not be asked to pay out any funds for the "Health Sense" campaign which will be paid for by subscription from Seattle physicians and laymen interested in the campaign.

Trusting you will favor us with an endorsement, I remain

Yours very truly,

Rudolph Block, Jr.,
Seattle Times.

It was moved that the letter be referred to the Board of Trustees for action. Seconded and carried.

GOITER PREVENTION COMMITTEE

Dr. E. S. West, of Yakima, made an informal report on the work of the goiter prevention committee. He suggested that the goiter prevention campaign be made state wide under the supervision of the medical profession with the cooperation of the Public Health League.

It was moved that this matter be referred to a committee to draw up resolutions. Seconded and carried.

The President appointed the following committee: E. S. West, B. T. King, H. J. Whitacre, D. C. Hall.

CONTACT COMMITTEE

The reports of the Contact Committee were then called for.

Hospital Standardization and Survey

Dr. H. E. Coe, presented the following report on Hospital Standardization and Survey:

A review of the present year's activities of this committee must be prefaced by a few words in recognition of the status of the work as it existed at the end of last year.

Thanks to the thoro and sound foundation laid by Dr. Swift and his committee for the past two years, the situation has been most favorable for steady progress. The ideas and ideals of standardization are thoroly understood and are accepted facts thruout the state. The state is organized into districts with able men representing the committee in each district; hospitals and communities everywhere look upon standardization as the goal toward which to work in the institutional care of the sick; the ideals of standardization have been demonstrated as practicable for small as well as larger hospitals; central standardization communities have been developed in the larger communities for closer correlation of hospital work; and the state organization has been recognized and approved by both the Council on Hospital and Medical Education of the American Medical Association and the American College of Surgeons. Thus hospital standardization in this state has passed from its period of trial and organization to an era of established fact, and has entered a period of observation and constructive criticism.

During the past year there have been numerous inquiries from the Council on Hospital and Medical Education relative to the status of various hospitals, and the character of certain men who are managing them. There have been rulings made by the American College of Surgeons relative to consolidation of staff meetings in the larger centers, and to the status of those hospitals which permit unethical practitioners to treat any cases whatever within their walls. Standards for the instruction of internes have been reviewed and emphasized. Two new hospitals in Everett have been added to the approved list. The Lions Club of Longview applied to the committee for information and aid in the promotion of proper ideals for a class A hospital, and one of the members of this committee made a trip to that community and took a leading part in the hospital drive. The column upon Hospital Standardization in Northwest Medicine has been maintained and several valuable contributed articles have been published, in addition to the usual editorials.

This type of activity indicates a departure from the period of promotion or of selling the idea and the beginning of the period when we may turn our attention to smoothing out the rough spots. What are these rough spots, seen as we look on the work which has been accomplished?

Records! Records are the first essential of the whole structure of standardization. They are infinitely better than at first, but still leave much to be desired. The following criticisms are still too frequently true. They do not give definite information; they are often absolutely lacking in essential points; they do not convey to the mind of the reader anything which remotely resembles the condition which the eye of the writer perceived; progress notes are absent; the discharge note is absent; the end result is impossible to determine; the description of the operation, the physical examination, shows no reason for the operation, or does not lead rationally to the stated diagnosis. They are too often merely to "get by" with no regard to the actual function of a record as a means of permanent preservation of the case for reference and analysis.

The real fundamental reason for this vital defect is that it is too hard for the average man to write records. There are two methods of remedying this: (1) internes and the proper use of them, and (2) a historian who is a stenographer and can take dictation rapidly, transforming a hurriedly spoken description into a neat concise record. Of the two the second is more important. A man will give dictation to a tactful intelligent stenographer, when he will be too busy to sit down and write, and he will take pride in reviewing his neat typed records, when he would sign a handwritten one without reading it. If we are to have acceptable records we must make the writing of them as easy as possible.

We need a readjustment of standardization committees. Standardization is top heavy on surgery. The cases of the surgical specialists and the cases of the medical men and the cases of the general practitioner are in even greater need of careful review than those of the surgeon. The mistakes of these men may not be as spectacular as those of the surgeon, but they are equally serious and are perhaps more frequent. Each standardization committee should have as a member some one who is qualified to pass upon such cases. Standardization comes into deserved disrepute when a surgeon pretends to pass upon the physical examination, the diagnosis and the treatment of an internist, a pediatrist or an oculist. The management of the hospital should attend carefully to the selection of the standardization committee, appointing only the highest type men and those whose opinions the staff unreservedly respects.

Those hospitals which have internes or which wish to obtain them must give the interne something of value in return for his services. We cannot hope to equal the didactic teachers from whom he has just come, but we can give bedside instruction talks based upon cases, clinical instruction, supervision in operating or in treatment, and suggestion based upon our years of experience which will be of greatest value to him and enable him to come among us at the end of his period of internship as a much more reliable and safe member of our profession than he could otherwise be. An interne is not an orderly and he is not a clerk; he is a man who is by training qualified to take his place among us and it is our responsibility to fit him in every way in our power to fill his place in a manner which will reflect credit upon our profession.

Another rough point is the attitude of some of the older men. They resent what they feel is an unwarranted intrusion; they resent suggestions as to the manner in which they should keep up records; they feel that standardization is a leveling process, instead of a minimum ideal to which there is no upper limit; they feel that no one has authority to say anything about their relations with their patients. Many of these men do excellent work and work which always has been above that required by the minimum standard, but they are individualists who will never become accustomed to the broader idea that each case is a unit in the progress and evolution of the healing art and that it can take its proper place in that evolution, only if it is properly and systematically recorded. In dealing with these men let us be most charitable and patient. They are men whom we all respect in many ways and whose opinions we value, and by patience and tact rather than by arbitrary rulings let us endeavor to enlist their ultimate hearty cooperation. In the mean time we will continue to obtain our best cooperation from the younger men who understand how to write up their cases and who appreciate the value of case analysis and of team work in advancing our medical knowledge.

Standardization committees should beware of making regulations and rules in too great detail. Our profession is by nature individualistic; each man has his own personality and idiosyncracies and his own methods of treatment. What we are trying to obtain is the greatest good to the patient, and this can best be judged by end-results. One man may gain equally good results as another and still use entirely different methods of procedure. The broad general principles of treatment, of diagnosis and of physical examinations do not vary greatly but there are infinite variations in details which are dear to the heart of each of us. To attempt to regulate these by rulings of standardization committees is to bring the whole idea of standardization into deserved disrepute. Let us confine our efforts to the broad principles, analysis of cases and study of end-results. The trend of opinion is now strongly in the right direction, and we must carefully guard it lest we confuse it by obscuring the main objection in a mass of detailed rulings.

Finally, let us devise a better term than "Standardization." That word is not big enough for the ideals it is now inadequately representing.

Dr. P. D. McCornack, chairman of the **Child Welfare Committee** had no report to offer.

Dr. C. W. Sharples, chairman of the **Public School Education Committee** had no report.

Dr. H. J. Whitacre stated that the **Public Health League** should receive recognition for the extensive work it had been doing in goiter prevention work.

Cancer Committee

Dr. H. C. Thomson read the following report of Dr. M. G. Sturgis, chairman of the Cancer Committee:

Herewith I submit the report of the activity of the Cancer Committee, of which I had the honor to be chairman.

During October and November we distributed twenty-four thousand pamphlets, dealing with the problem of cancer, thruout the state of Washington. These were distributed thru the active co-operation of the various county chairmen. At the same time the film, called The Reward of Courage, which depicts in a way that is calculated to catch the public eye, various phases of the cancer problem were circulated thruout the state. This being the third trip of this particular film, it did not always meet with the approbation of the chairman, who, in some cases, felt that it would only bore the public. With this opinion I did not agree, but perhaps they knew their local conditions much better than the chairman possibly could.

In addition there have been some eighteen or twenty public talks given in various parts of the state, reaching in this way some thousand or more people direct. It is the aim of this committee to reach the smaller towns during the coming season, paying particular attention to those in the eastern and central sections. This has in part been arranged for but will not be begun until after the close of the harvesting season. I believe that one can already discern the effect of the campaign of education of cancer, since cases are coming to the surgeon in the earlier stages of the disease.

M. G. STURGIS.

The report of the committee was accepted.

Tuberculosis Committee

Dr. F. Slyfield, chairman of the Tuberculosis Committee, made the following report:

THE TUBERCULOSIS SITUATION IN WASHINGTON

1. What institutions in Washington are caring for tuberculosis, public or private?

2. What organizations are fighting the disease; how are they financed?

3. What is the medical profession doing to combat the disease?

4. What representation has the medical profession in the administration of tuberculosis organization?

5. How can the public be reached with the preventative message? What are the needs of the state?

1. Institutions caring for tuberculosis. Public. There are five public tuberculosis sanatoria in the state and according to the order of their establishment they are as follows:

a. Pierce County Tuberculosis Sanatorium at Lakeview, about ten miles south of Tacoma, was opened in 1915. It is a modern institution with up to date equipment and 93 beds. A children's pavilion was opened in 1917 with 25 beds. The medical director is Dr. John Steele of Tacoma. This place is maintained by county funds and cares for charity patients.

b. The Spokane county sanatorium, which is called Edgecliff, was opened in 1915 with 140 beds. A children's department was added in 1917 with 25 beds. This is a splendid institution and is in charge of Dr. Frank S. Miller.

c. Snohomish county sanatorium, established in 1918, is located near Snohomish. It accommodates forty patients. The medical director is Dr. Leon G. Woodford.

d. Grays Harbor county built a sanatorium for its county patients at Elma in 1921. This institution accommodates nineteen patients. A children's department was built by the Kiwanis Club in 1923 with 10 beds. Dr. H. L. Hull is the medical director.

e. The other public tuberculosis sanatorium is Seattle's municipal institution, located ten miles north of Seattle, and is called Firland. The present buildings were constructed in 1913 and accommodate 145 patients. A children's department was opened in 1915 with 25 beds. Aside from caring for Seattle's indigent cases Firland, thru an arrangement with King County, also cares for the charity cases of the county.

Private Sanatoria. There are two private institutions in Washington, caring for tuberculosis patients. The first private tuberculosis institution in the state was the Pulmonary Hospital of Seattle, established in 1908 and built with bequests of the late Loretta and Lenora Denny. It is situated ten miles south of the city near Des Moines road. It accommodates about 50 patients. At present there is no medical director, but several physicians of Seattle send their tuberculosis patients there and care for them individually.

The other institution is Laurel Beach Sanatorium which was opened in 1921. It is located just outside the city limits on the salt water beach and has fifty beds. The rates are $30.00 and $35.00 a week. The medical directors ore Drs. J. E. Nelson and F. Slyfield.

The total number of sanatorium beds for tuberculosis in the state of Washington is, therefore, about 620. The number of tuberculosis cases in the state probably reaches ten times that number.

2. What organizations are fighting tuberculosis? There are four types of organizations: State Board of Health, Washington Tuberculosis Association. The various county antituberculosis leagues, City Health Departments.

3. What is the medical profession doing to combat the disease? No organized effort has been made for the tuberculosis cause which can be attributed to physicians outside of the sanatoria and health departments. Individually, of course, most physicians treat tuberculosis patients but with a few notable exceptions it is done in a half hearted, unintelligent fashion and is seriously unsatisfactory.

4. What representation has the medical profession in the administration of tuberculosis organizations? The State Board of Health has, of course, its director, Dr. Paul A. Turner, and the health officers of the various counties who are necessarily medical men.

The Washington Tuberculosis Association. Dr. Christian Quevli of Tacoma is one of the directors of this organization and all physicians whose names appear in connection with the several branch organizations may be assumed to represent the State Tuberculosis Association.

As regards the medical representation in the county antituberculosis leagues, practically every league in the state has at least one physician on its board. Sometimes he is the county health officer and again a general practitioner who has manifested an interest in tuberculosis work. In the tuberculosis division of city health departments, the work is controlled and directed by an executive physician and carried out by several other physicians.

5. How can the public best be reached with the preventiae message? The work of the Washington Tuberculosis Association, which has been under way for some three years, has had a more far-reaching effect and has been more productive of results than all other agencies. It has been largely responsible for the establishment of all the county institutions in the state. It has stimulated and assisted in the organization of the various leagues. It has conducted several series of public tuberculosis clinics in most of the towns of the state. These free clinics have done more to popularize tuberculosis work than anything else that has ever been done and a tremendous amount of incaculable good has been accomplished for the public welfare thru the recognition of cases of early tuberculosis. Innumerable lectures on tuberculosis and allied subjects have been given under the auspices of the State Association all over Washington for a number of years. The chest examinations and the lectures have been given chiefly by medical men who have donated their time and services. Many conditions outside of tuberculosis have been discovered also, and patients referred to their local physicians for treatment.

Now the Washington Tuberculosis Association has a full time examiner on salary, Dr. J. W. Fennell, who devotes his entire time to the above mentioned work. Complete records of all patients he examines, the physical findings and his recommendations are kept on file at the association's office in Seattle. Many physicians about the state donate the use of their laboratories and x-ray apparatus as aids to accuracy in this work. The doctors in the town where the clinic is held frequently bring in suspicious cases and discuss them with the examiner. This gives the physician an opportunity to observe the proper methods of chest examination, it teaches him the important points in history taking and also it gives him much needed formation on adequate treatment.

The medical men of the state can help the public end of the tuberculosis cause best and can do themselves most good by energetically supporting the Washington Tuberculosis Association in its splendid work. Mrs. B. B. Buchanan of Seattle is the original and present executive secretary of the organization.

The feature of the tuberculosis problem which chiefly demands the attention of the State Medical Association is the education of its own members in the recognition and treatment of tuberculosis. It should be advertised among medical men all over the state that they are welcome to attend these clinics, which are conducted by a capable chest man who is not practising medicine and has absolutely no personal interest in the patient; that they have here the unusual privilege of a free consultation on their own patients in their own towns. The examiner is eager to give any and all physicians whatever information and instruction he can regarding the working out of the case, the diagnosis, and the most promising line of treatment.

The report of the Committee was accepted.

Social Hygiene Committee

Dr. C. F. Engels, chairman of the Social Hygiene Committee, presented the following report:

The Social Hygiene Committee is able to report for this quarter a more active and widespread interest than ever before. In Spokane, under the direction of Dr. Pennock, various lectures have been given in connection with the Health and Sanitation Committee of the Chamber of Commerce and more of the same type are planned for the rest of the year. These lectures are being given before audiences of clubs, working men's organizations, P.-T. A.'s, etc. I have purchased for them a supply of pamphlets from the Oregon Social Hygiene Society for distribution in Spokane.

In Yakima, under the direction of Dr. Brush, we have also had a series of lectures before the local service clubs, ministerial association, the Y. M. C. A. and the Y. W. C. A. authorities, and the women's clubs. The local county commissioners have promised to provide a fund for a clinic for the treatment of indigent venereal cases. A regulation to enforce examination of all people handling food in Yakima county has been put into force. The venereal prophylaxis placards are being placed in the effort to direct those seeking information on this subject to the proper authorities. Dr. Brush advises the same lack of interest among the members of the profession in reporting venereal diseases that we find in most of our cities.

In Seattle, Dr. Peacock reports somewhat slower progress, due to the lack of cooperation of the city administration in the handling of social problems. He notes the close association of the liquor traffic with the increase of venereal disease. He reports the cases of venereal disease acquired by the men in the Navy to be 100 per cent greater in Seattle than in San Pedro, and suggests the need of the city of a morals court, which should be semiprivate, have its own judge and medical staff, and should handle all women picked up for delinquency, independently of any police action.

For Tacoma and Pierce county, I can report a somewhat better state of affairs. We have continued our program of lectures, card exhibits, motion picture exhibitions, etc., as previously reported, and we are enforcing examinations of all persons handling food, for the possibility of them being carriers of communicable disease. We are also enforcing strict and frequent examination of all prostitutes, with imprisonment for those who neglect the established regulations. We are continuing the operation of a free clinic for indigent venereals and hope soon to have a detention home for the care and the rehabilitation of sexual delinquents. Apparently the above named measures are producing results, as reports received from both the Army at Camp Lewis and the Navy, of venereal disease acquired by their men in Tacoma, have greatly diminished during the past six months. As a recommendation for the future, I would suggest the providing of a definite sum of money for printing our own pamphlets for distribution in this state.

The report of the Committee was accepted.

Industrial Relations Committee

Dr. C. D. Hunter, chairman of the Industrial Relations Committee, stated that, as a new fee schedule had been accepted last year, there had been none made out this year. He said that Dr. Bird, the Medical Advisor of the commission, had given the committee hearty cooperation and he thought that it would be well to express some appreciation of Dr. Bird's work.

Dr. Bird called attention to the recent ruling of the Attorney General, permitting osteopathic surgeons to care for cases coming within the act. He also said that the Medical Department had considerable valuable information which was now available to the profession.

It was moved that a committee be appointed to bring in recommendations on the Industrial Relations Committee report.

The President appointed the following Committee: F. Maxson, S. M. Langworthy, C. J. Lynch.

Dr. E. W. Young, chairman of the Executive Committee of the Public Health League, states that he had nothing to add to his report which would be given at the regular public health meeting.

Dr. C. J. Lynch moved that the Washington State Medical Association go on record as being opposed to free clinics, for its detrimental effect on citizens and its economic loss to the doctor.

It was moved and seconded that Dr. Lynch put his motion in writing.

The House of Delegates adjourned until the following day.

WEDNESDAY, AUG. 13

9 a. m.

A quorum being present the meeting was called to order.

The Secretary presented the names of the deceased members since the last meeting and moved that a committee be appointed to draw up suitable resolutions.

The President appointed the following committee: A. E. Gerhardt, S. McLean, J. T. Dowling.

The committee appointed to investigate and bring in recommendations in regard to expenditures of the Defense Fund made the following report:

Your Committee recommends that Article XIII Section IV be amended to read as follows:

"The Board of Trustees, except during sessions of the House of Delegates, may vote such amounts as may be necessary to carry on the work of the Association and the general office overhead for supervision of the work of its Defense Fund.

"The defense Fund shall assume all other expenses connected with the operation of its department."

(Signed) D. A. Nicholson,
D. H. Palmer,
C. H. Thomson.

The report of the committee was accepted.

The following report of the Auditing Committee was then read and accepted.

August 12, 1924.

Washington State Medical Association,
Gentlemen:

We, the appointed auditing committee do hereby accept the auditor's report of the books for the past year.

(Signed) A. A. Matthews,
A. P. Duryee,
H. D. Dudley.

The report of the committee was accepted.

Mental Hygiene Committee

Dr. D. A. Nicholson, chairman of the Mental Hygiene Committee, presented the following report:

The Committee on Mental Hygiene desires to report that they have been keeping in touch with developments in this state and have noted an increased activity on the part of most organizations along the line of mental hygiene work. We find there is a tendency to wander into dangerous and speculative grounds.

The Committee expects that there will be considerable activity during the next session of the legislature along the lines of establishing a new institution for the feeble minded and feels that the physicians of this state should take an active part in this work as such an institute is greatly needed.

The Washington State Conference of social work has appointed one of the members of your committee chairman of the division of public health with special reference to mental hygiene for the coming year. The chairman of this committee hopes to cooperate with the Public Health League in selecting the personnel of the committee and also in the arrangement of papers for that organization at the annual conference next year. This will give an opportunity to assist in educating the public along this line.

D. A. Nicholson, *Chairman.*

The report of the committee was accepted.

The proposed amendment in regard to the annual assessment for membership and subscription to the Journal was then read and adopted.

Dr. Maxson requested further time for his committee.

Dr. Lynch requested further time for his report.

Dr. E. W. Young presented the following amendments to the By-Laws for adoption:

Amendments to By-Laws of Washington State Medical Association

Amend Article VI, Section 1, by inserting "A Field Director" after the words "an Assistant Secretary," making the first paragraph in said section read:

Section I. The officers of this Association shall be President, two Vice-President, a Secretary-Treasurer, an Assistant Secretary-Treasurer, a Field Director, a House of Delegates and a Board of Trustees.

Amend Article VII, by adding thereto another section, to be designated as Section 4, to read as follows:

SECTION 4: The Field Director shall represent the Association before the county societies, under instructions from the President and Board of Trustees; shall aid in organizing any counties or communities not as yet organized, shall accompany the President or other officers in attending society meetings when possible to do so; shall aid the committee on publication in the presentation of news articles and in obtaining lectures and addresses on topics of general health; and shall be of any further use, as determined advisable and practicable by the officers of the Association.

Amend Article VI, Section 3, by inserting after the word "Association" and before the word "shall" the following line: "except the Field Director, who shall be the Executive Secretary of the Public Health League of Washington," making the said section 3 read as follows:

SECTION 3. The officers of this Association, except the Field Director, who shall be the Executive Secretary of the Public Health League of Washington, shall be elected on the morning of the last day of the annual session and, when necessary, delegates to the American Medical Association and Trustees for Northwest Medicine Publishing Association shall be elected at the same time and place. All elections shall be by ballot and a majority of the votes cast shall be necessary to elect.

Amend Article VIII, Section 1, by inserting after the comma following the words "By-Laws" the line, "except the Field Director, who shall be the Executive Secretary of the Public Health League," making the said Section as amended read:

SECTION I. The House of Delegates shall be the legislative and fiscal body of this Association. It shall nominate and elect all officers provided for in these By-Laws, except the Field Director, who shall be the Executive Secretary of the Public Health League. All reports of officers and committees shall be made to it in writing. It shall be presided over by the President of this Association and in his absence by one of the Vice Presidents. The Secretary-Treasurer of this Association shall keep a separate record of its proceedings, a summary of which shall be reported to each general meeting before final adjournment.

Amend Article XII, Section 2, by substituting for the said Section 2, the following:

SECTION 2. The annual assessment against each active member of the component societies shall be twenty dollars; three dollars of which shall be retained by the Association; two dollars shall cover the subscription to Northwest Medicine and fifteen dollars shall be remitted by the Secretary-Treasurer as rapidly as available, on the first of each month, to the Secretary-Treasurer of the Public Health League of Washington, in consideration of which the Executive Secretary of the said Public Health League of Washington shall serve as Field Director of this Association and fill the duties as prescribed in Section 3, Article VI, as amended. Honorary members and fellows, not in active practice, shall not be assessed for annual dues, but they shall not receive the Journal unless they individually subscribe for it.

It was moved that the amendments be presented to the Board of Trustees for consideration and report and that Dr. Young make a more detailed report at the next meeting. Seconded and carried.

(To be concluded)

KING COUNTY MEDICAL SOCIETY

Pres., F. T. Maxson; Secy., C. E. Watts

A general meeting of King County Medical Society was held at Seattle, Wash., Sept. 1, 1924.

Dr. E. P. Sloan, Bloomington, Illinois, President of the American Association for Study of Goiter, addressed the Society on "Some Technical Points in Thyroidectomy." He complimented the medical profession regarding their goiter work in this region. In the East there are fewer tumors of the thyroid it is said, but they are probably not diagnosed. Eighty per cent of heart patients seen by the essayist are really goiter cases. There is no such thing as heart block in goiter. Goiter heart is a myocarditis with affection of the extrasinus nodes. Auricular flutter supervenes. Auricle dilates, and then fibrillation. Myocarditis is difficult to diagnose.

Operative procedures are as follows: (1) X-ray will stop the secretion from gland. For two or three weeks massive dose; second dose about half the benefit; third dose no benefit. (2) Injection: Boiling water quinine and urea, ½ per cent. Spectacular result. (3) Ligation at upper pole. Often combine injection and ligation. (4) Ligation inferior thyroid. This used by some operators in conjunction with thyroidectomy. The American idea is that the blood supply of remaining portion of gland should be left intact. Essayist has hundreds of cases with total removal of the gland. Patient adapts himself in two years to total loss. All of diseased portion should be removed. Films were used showing technic of operations.

In discussion Dr. J. T. Mason mentioned Lugol's and management of the extremely severe case. Dr. King considers the goiter heart a toxic heart. Lugol's solution is of great value in exophthalmic goiter. Avoids ligations.

The applications of Drs. Robert Wightman and C. C. Kehl were accepted and applications of Drs. A. Fullerton and L. L. McCoy were read.

PIERCE COUNTY MEDICAL SOCIETY

Pre., S. M. MacLean; Secy., W. B. Penney

The regular meeting f the Pierce County Medical Society was held in its rooms, Tacoma, Wash., Sept. 9, 1924. Dr. MacLean in the chair.

PROGRAM

Diagnosis of Urogenital Tuberculosis by Dr. Charles H. Doe. This paper covered fully all the details of diagnosis of the various manifestations of urogenital tuberculosis. The paper was discussed by Dr. H. S. Argue.

Review of Findings of 303 Cases of Pathology of the Lower Spine, by Dr. E. A. Rich who stated that this paper had to do with fixed symptoms referable to the lower spine due to bone pathology. The paper was illustrated with many lantern slides and showed a great deal of painstaking care in observation and presentation. Discussion by Drs. Whitacre, Hunter, Brobeck, W. B. McCreery and Hyslin.

A communication was read from Dr. D. A. Nicholson, the new president of the Washington State Medical Association, expressing his desire to be of help to the county societies and asking if it would be feasible for officers of the state society to present papers and make talks at the various county meetings. Dr. Whitacre moved that we commend the proposed plan of Dr. Rich in regard to interchange of members of societies and that our program committee arrange a program with Dr. Nicholson and Mr. Robert Jones in the near future. Motion carried.

There being no further business, the meeting adjourned.

SPOKANE COUNTY MEDICAL SOCIETY

Pres., C. E. Butts; Secy., G. H. Anderson

The regular meeting of the Spokane County Medical Society was held at Spokane, Wash., Sept. 11, at the Deaconnes Hospital. The minutes of the previous meeting were read and approved.

Dr. Corkery reported a case of multiple carcinoma metastases to the skull, right humerus and right femur, the primary tumor not being known. Patient also had a diabetes. Discussed by Drs. Epplen, Langworthy and Butts.

Dr. Hamblen reported a case of pregnancy in a patient with tabes dorsalis with gastric crises, going to a full term and an apparently healthy baby being delivered. Discussed by Dr. Price.

Dr. Reid reported a case of cardiospasm, demonstrating x-ray plates and describing method of treatment with the Plummer water dilator.

Dr. Anderson reported a case of auricular paroxysmal tachycardia following diphtheria, with auricular and ventricular rate of 230 per minute.

Dr. Matthews reported a case of jaundice secondary to common duct obstruction. Bleeding time and coagulation time were much prolonged. He presented the problem of treatment for discussion.

Dr. Langworthy made a motion that the clinical meetings at the hospitals be discontinued. Seconded by Dr. Collins. Motion was defeated.

The application by Dr. Robert Lee Rotchford was reported upon favorably by the Board of Censors.

The application of Dr. A. D. Schlotthauer, of Newport, Washington, for a transfer from the Walla Walla Valley Medical Society was read.

There being no further business to come before the society the meeting was adjourned.

SNOHOMISH COUNTY MEDICAL SOCIETY

Pres., C. L. Hoeffler; Secy., J. F. Beatty

Snohomish County Medical Society held its regular monthly meeting at Everett, Sept. 2. Fifteen members were in attendance. Dr. Ellison, of Monroe, presented a paper on scarlet fever. A patient was also exhibited, in whom the organs of the body were transferred, the condition being illustrated by radiograms.

WHATCOM COUNTY MEDICAL SOCIETY

Pres., W. W. Ballaine; Secy., A. W. Dawson

Whatcom County Medical Society held its monthly meeting at Bellingham, Aug. 29. The paper of the evening was by Dr. E. P. Sloan, formerly president of the American Association for the Study of Goiter, who gave a moving picture demonstration of the operative technic of thyroidectomy.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

Pres., J. T. Dowling; Secy., M. J. Morris

The meeting of Puget Sound Academy of Ophthalmology and Oto-Laryngology was held at Virginia Mason Hospital, Seattle, Wash., at 8 p. m., Sept. 16, with President Dowling presiding.

Clinical cases were presented and discussed.

Dr. D. H. Bell, Tacoma, presented a case of **Embolism of the Central Artery of the Right Retina** in a man 49 years of age, whose blood pressure was high. He became suddenly blind in the right eye twelve days ago. At that time the edema of the retina was more pronounced than at present. The arteries of the retina are sclerotic with thickened walls. A small hemorrhage from a branch of the retinal artery was noted.

In discussion Dr. Wurdemann stressed the value of testing the blood pressure in every eye examination and, if it was abnormal, have further laboratory examinations made.

Dr. H. V. Wurdemann showed a girl whose left tonsillar region and soft palate were covered by nodules. General physical examination negative, no tenderness or sore throat. Laboratory examination of smear and culture from the throat were negative. His diagnosis was Vincent's angina despite the negative findings. Recovery has been rapid under local application of silver nitrate and salvarsan gargle.

Dr. J. Morris presented two cases, the first with traumatic luxation of the right lens into the vitreous. Patient 40 years old. Ten years ago he fell with a telephone pole striking his head in the frontal region to right of mid line. Examination shows the anterior chamber deep, the iris somewhat shrunken, the pupil deep black. When directed to look in various directions the iris is seen to tremble. These symptoms prove the lens has been dislocated completely into the vitreous, freely movable. Such eyes must finally be enucleated as extraction of a lens floating in the vitreous is an impossibility.

The other case was one of trachoma, showing the result of extraction of the tarsal plate of both upper lids with the conjunctiva. A year ago the patient had a rather dense pannus of left eye, extending down to the upper border of the pupil, and a corneal ulcer at its lower border. There was quite marked ciliary irritation. The other eye also showed a pannus but not so dense as the left. The upper lid of each eye showed a thick and granular conjunctiva on a thick and degenerated tarsus. The corneal ulcer was treated for about three weeks, then the left tarsal cartilage with its conjunctiva was removed and, as soon as that had cleared up, the same operation was performed on the other eye. Recovery in each case was uneventful. This procedure is not claimed by anyone to be a panacea for the troubles of trachoma but, when seen how beneficial the operation can act on properly selected cases, the objections become weak. The operation is indicated when there is marked infiltration of the tarsus, with thickening and granulation in the covering conjunctiva. There must be a healthy scleral conjunctiva and show a sharp line of demarcation from the diseased tissue.

Drs. Hazeldine and Waterman, of Chicago, spoke informally of their trip thru the West. Dr. Hazeldine touched on the work being done in bronchial asthma. He stated that the reason for their great success with severe asthma cases was due to investigation of the cause of the sensitiveness to the certain protein and its removal.

OREGON

WILLAMETTE VALLEY MEDICAL ASSOCIATION

Willamette Valley Medical Association held its monthly meeting at Eugene, Sept. 4. More than forty members were present from Lane, Linn, Lincoln and Benton counties. Dr. C. E. Riggs, of Albany, discussed the value of chlorine treatment for acute colds and other respiratory troubles. Various medical problems were considered.

Tuberculosis of the Knee. The nature of the evidence commonly relied on in making a diagnosis of tuberculosis of the knee is discussed by Nathaniel Allison, Boston (Journal A. M. A., Sept. 6, 1924). He also indicates the value of establishing a positive diagnosis in tuberculosis of the knee at as early a time as is possible in the progress of the disease. In suspected cases of tuberculosis of the knee, that is, those in which the circumstantial evidence points definitely to tuberculosis as the disease process, operation should be performed for the purpose of establishing a positive diagnosis. Tissue should be examined and animal inoculation done. This course is justifiable because the disease process, where it exists, will more or less completely destroy the knee, and will act as a menace to the life and limb of the person diseased. A Wassermann test should be a routine procedure in the study of the etiology of the knee joint disease. In case the tissue examination by the microscope shows no evidence of tuberculosis, or in csae the guinea-pig inoculation shows, after a proper period of time, no evidence of tuberculosis, then it may be safely assumed that the knee joint in question is free of tuberculosis. It is perhaps more frequent than is generally realized for a person to have syphilis as well as knee joint tuberculosis.

HOSPITAL STANDARDIZATION

Edited by HERBERT E. COE, M.D.

STAFF MEETINGS

With the passing of summer comes the onset of staff meetings, and with these will come again the discussion of attendance, suitable subject matter for the programs, etc. The contention is frequently heard that standardization is the cause of waning interest in the county medical society, because it multiplies medical meetings, and because the programs consist of papers which are legitimate material for the society meetings. The first objection is undoubtedly a valid one. Staff meetings add to the list of demands which make it increasingly difficult for the doctor to enjoy his home. Noon meetings are unsatisfactory on account of interruptions, tardiness, difficulty of attendance, and lack of time. In some hospitals afternoon meetings have proven successful, but in most instances evening meetings have seemed best. There is apparently no way to avoid this additional meeting. Nothing of value has ever been accomplished except at the expense of a certain amount of effort, and the price which we must pay for better hospitals includes the effort of attending staff meetings.

The objects of the staff meeting are to make the hospital as nearly as possible the ideal place for us to treat our hospital cases, and to make ourselves better able to treat them—alyways the better care of the patient. The staff does not discuss infections and deaths for the purpose of criticizing the attending physician but to arrive at a means of avoiding, as far as it is humanly possible, future infections and deaths. The analysis of the work of the previous month is not merely a mass of statistics to be endured; it gives a perspective which is lacking as we focus our attention on our own individual cases. The reports of the various departments serve to bring to our attention additional suggestions for the care and service of our patients. The discussion of hospital equipment and problems brings the hospital management and the staff in closer touch and gives opportunity for improvement of specific features.

The second objection, that of the type of papers presented at staff meetings, should not be laid at the door of standardization, but rather it should be charged to the misunderstanding on the part of the committee of the objects of the staff meeting. The only papers permissible are case reports and analyses. The abstract paper which touches the hospital only thru the medium of a barely mentioned case has no place at a staff meeting. Neither should the meetings be made occasions for addresses or papers by prominent out-of-town men. General scientific papers and addresses by visiting men properly belong in the county society and standardization committees which use such contributions to bolster up the attendance at staff meetings are guilty of a direct attack upon the fundamental unit of our professional organization—the county society.

BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Life Insurance Examination. Edited by Frank W. Foxworthy, Ph.B., M.D. Formerly Chairman Medical Section, American Life Convention; President of the American Association of Medical Examiners, etc., etc. Cloth, 156 Illustrations, 738 pp. $9.00. C. V. Mosby Co., St. Louis.

This is by far the most comprehensive and complete work on life insurance examination that has come to our notice. To give some idea of its scope there are chapters on industrial insurance, group and fraternal insurance, relations of the agent to the medical examiner, organization of medical department, the medical director, medical referees, the medical examiner, general instructions to examiners, the examination of women. Then come chapters on examinations of special parts of the body and with special reference to certain diseases, as tuberculosis, heart and kidney diseases, albuminuria, abnormal blood pressure, syphilis, goiter, malignancies, postoperative risks, glycosuria, etc. Following are chapters on laboratory procedures, tropical risks, army risks, army risks, substandard risks, health and accident insurance, health conservation and welfare work, fraud, legal aspects of insurance and the influence of occupation on risks. Moreover, most of these chapters are monographs by experts, not only in the insurance world, but by such men as Crile and White.

Some of the studies in statistics are of great interest to the practitioner at large, as, for instance, among over 4000 cases rejected for hypertension alone during a period of thirteen years, there were 507 deaths: 104 by apoplexy, 97 by nephritis, 83 by heart disease, 39 by arteriosclerosis and 18 by angina pectoris, together with numerous and varied causes of no significance. Eighty per cent of high tensions were due to cardiovascular renal disease. Persons with systolic pressures between 90 and 100 mm. were found much better risks than those having a pressure of 12 mm. above the average for age. In respect to the quality of risk following goiter operations, there is some difference of opinion. Crile says in cases of hyperthyroidism operated upon early the patient should have a normal life expectancy at the end of two years.

The ratings for substandard risks are very important as indicating prognoses based on facts. Thus gastric ulcer patients following operation are unfavorable risks, but after three years operated duodenal ulcers are favorable risks. Functional heart murmurs are penalized as insurance risks, the amount probably indicating the amount of uncertainty in the examiner's decision. There is an extraordinarily good article on malignant growths by Masson and Broders of the Mayo Clinic. Altogether this book is well worth while and reflects great credit on its editor and publishers.

Winslow.

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Fertility and Sterility in Human Marriages. By Edward Reynolds, M.D., Boston, Mass., and Donald Macomber, M.D., Boston, Mass. With a section on the Determining Causes of Male Sterility, by Edward L. Young, Jr., M.D., Boston, Mass. Octavo volume of 285 pp., illustrated. Philadelphia and London. W. B. Saunders Company. 1924. Cloth, $5.00 net.

In this work the writers consider both male and female causes of sterility. The male is responsible for about half the cases of sterility thru defects or absence of spermatozoa, and thru disease of the vesicles or prostate, leading to sticky or poisonous secretions interfering with the action or progress of the spermatozoa. In regard to the causes of the female these are outlined in a most interesting and painstaking manner. Perhaps the chief single cause is arrest of development of the uterus, associated with acute anteflexion, itself a sign of lack of development. These cases are, however, those most easily cured by operation. They constitute about one-quarter of all female cases of sterility, and some 80 per cent may be overcome by operation. Cervical plugging by mucopurulent secretion and closed tubes from various infections are also very common causes. The writers have been for years investigating the nutritive causes of sterility in both sexes and have shown that an abundance of vitamins, amino-acids, exercise and all agencies improving the general condition are of vital importance in the avoidance of sterility.

It is not generally appreciated that miscarriage may be wholly due to imperfect fertility of the male and, on the other hand, that its occurrence may be a favorable sign of improving male fertility, as is shown in this treatise. In the latter part of the work there is outlined a most practical routine procedure for the examination of the male and female, following coitus, for the diagnosis of the cause of sterility. After this comes the last chapter on the surgical treatment of sterility. There is no more valuable, instructive, interesting or authoritative work on the subject in English.

Winslow.

First Steps in Organizing a Hospital. An exploitation of Ideals and Principles Incident to the Inception and Organization of a Hospital. By Joseph J. Weber, M.A., Editor The Modern Hospital, etc. 205 pp. The Macmillan Co., New York. 1924.

This book is an excellent exposition and discussion of the preliminary work of establishing a hospital. Too often some individual or organization decides to turn a certain amount of reserve energy toward the hospital field. The idea has an appeal to those who are charitably and philanthropically inclined, and the project is launched forthwith without any adequate conception of the principles and problems involved. This book states very clearly the numerous factors upon which the size, location, financing and demand for a hospital depend. It is written especially for the smaller type of hospital, but contains much material which is of value to larger communities and institutions. The introduction is a survey of the hospital field of today and contains interesting statistics, taken largely from the recent edition of "The Modern Hospital Year Book." The succeeding chapters discuss the essential steps to be taken in ascertaining the demand in any community for additional hospital beds; the ratio of beds to population in various types of communities; types of hospitals advisable to meet various conditions; methods of publicity and of stimulating public interest; preliminary duties of boards of trustees; selection of architect, contractor, executive force, medical staff, etc.; financing of construction; organization and function of auxiliary bodies.

There is an excellent appendix, giving examples of pertinent corporation laws, charters, articles of incorporation, agreements with architect and contractor, also lists of the employees necessary for hospitals of various sizes, and examples for the year 1923 of the earnings and expenditures of hospitals of 35, 50 and 100 beds.

The author has been fortunate in having the advice and cooperation of many of the outstanding authorities in hospital development and management and he has produced a handbook which is valuable not only for those who may be contemplating the establishment of a hospital but also for those who are concerned in the management of existing institutions.

Coe.

Handbook on Modern Treatment and Medical Formulary. Compiled by W. B. Campbell, M. D. Seventh Edition, revised and enlarged by John C. Rommel, M.D., and C. E. Hoffman, Ph.M. Cloth, 693 pp., $5.00. F. A. Davis Co., Philadelphia.

It may be futile to carp and cavil at a book in its seventh edition but it should be sufficiently strong and enduring to withstand such attack. The present volume would treat disease chiefly thru the medium of the pen which has been said to be mightier than the sword and by analogy, the knife. The writer evidently has this viewpoint, as appendicitis is to be treated, first, by a dose of castor oil, then by HCl after meals, and finally by opium pills, all in neat, meticulous prescriptions. It is only fair to the author to note that after all these directions there is a line and a half at the bottom of the page to the effect that "medical treatment requires constant care (whatever that means) and is not a very safe procedure." But, if one must have medical treatment, why by all that is most medical give castor oil and ignore Ochsner.

The work is almost medieval in parts. One really expects to find the classic prescription in Macbeth, "Eye of newt and toe of frog, wool of bat, and tongue of dog." This is justified by reading the treatment under gastric ulcer. Poor old Lauder Brunton is exhumed from his grave, he who in his lectures in the last century on disorders of digestion (which the reviewer owned in his youth), naively advised the practitioner to first try alkalies

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and, if not successful, then hydrochloric acid. All modern treatment of ulcer is unknown apparently and the writer harks back to silver nitrate, etc. But what a glorious field is asthma in which to run amuck with the pen. Fourteen pages of R's, beginning with cocaine "given regularly." Never before was an R more needed in its original use as a sign of the zodiac for Jupiter, and used by the ancients as a prayer to Jove to mitigate the otherwise baleful effects of recipes.

The old shot gun prescription is herein revived in its most deadly form and the chance of the dread disease escaping from at least one of the lethal pellets is slight indeed. In fact, the volleys that follow one another in asthma remind one more of machine gun action in the late unpleasantness overseas.

Under the head of backache (the writer having become almost exhausted by the previous terrific combat with asthma), only sprained back, muscular rheumatism and neurasthenia are considered as causes. The vibrator is the only weapon advised in attacking the first two causes, but the pen is used to vanquish the neurasthenic back by means of only eight drugs in that most effective form of rear attack by liniment. It is sometimes instructive to pore over the medical annals of the past in order to appreciate from what we have escaped and to be thankful for the present volume, if we look at it in this light.

WINSLOW.

A Diabetic Manual for the Mutual Use of Doctor and Patient. By Elliott P. Joslin, M.D., Clinical Professor of Medicine, Harvard Medical School. Illustrated. Third Edition Thoroughly Revised. 211 p. $2.00. Lea & Febiger, 1924.

Every physician and layman who has to do with the care of a diabetic patient ought to read this book. It contains the latest and most accurate information concerning diabetes and its treatment. It is written in language intelligible alike to the physician and one not at all versed in medicine. It should be a God-send to the diabetic patient. Its perusal will enable him to appreciate his own condition and the means by which he can help to make comfortable and prolong his days. The details of diet, the use of insulin, indications of acidosis and all other details concerning diabetes are presented in a clear and fascinating manner. This little volume cannot be commended too highly and is worthy of the consideration of every reader.

SMITH.

A Study of Masturbation and Its Reputed Sequelae. By John F. W. Meagher, M.D., Neurologist to St. Mary's Hospital, Brooklyn, etc. Cloth. 69 pp. $1.50. Wm. Wood and Co. New York. 1924.

This little book contains a practical and sensible summary of our knowledge of the subject. The writer believes that all boys masturbate at some time, usually for a few years. He also states that the habit is more common in women than men, four or five times more common in the former. Also that over 10 per cent of married women masturbate. The relationship of thumb sucking in infants to masturbation noted by the writer is rather surprising and might be open to question. Masturbation in young children is regarded as physiologically not abnormal, but is always abnormal in adults.

The book would be a very suitable one for the use of intelligent parents, tho intended for the medical man. The harm resulting from the excessive indulgence of the habit is considered mental and moral more than physical. The naturally sensitive and moral react much more seriously when they realize the offensiveness of the habit, and so their symptoms are most marked. The methods of treatment recommended are simple and sensible.

WINSLOW.

The Surgical Clinics of North America. (Issued serially, one number every other month.) Volume 4, Number 3 (Chicago Number—June, 1924). 245 pages with 108 illustrations. Per clinic year (Feb. 1924 to Dec. 1924.) Paper $12.00, Cloth $16.00 net. Philadelphia and London. W. B. Saunders Company.

These clinical reports from Chicago surgeons contain much valuable material. Bevan presents cases of abdominal tumors, in which the diagnosis is difficult. They demonstrate that often the most experienced surgeons are unable at times to make a correct diagnosis with all possible facilities available. He emphasizes the fact that introduction of the x-ray has caused the neglect of some simple and effective diagnostic methods. The simple dilation of the colon with air gives information in some cases, not obtainable by more refined methods. Ochsner presents cases of inoperable carcinoma cured by the application of the actual cautery. In spite of very mutilating wounds the ultimate result was superior to any other procedures. Speed discusses traumatic lesions of the head of the radius with illustrative cases which offer valuable suggestions for treatment. These are merely samples of useful information from this volume.

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ORIGINAL CONTRIBUTIONS

TETANY.* WITH CASE REPORTS.

George C. Miller, M.D.

AND

Hazel C. Cameron, B.Sc.

During the past two years, a number of cases have been examined by one of us in which the diagnosis of tetany seemed warranted. The varied picture presented by these patients led to a review of the literature, with the hope of eliciting some means, either clinical or laboratory, whereby a diagnosis of this condition could be made in the absence, or before the occurrence, of the typical spasm involving voluntary musculature. This is especially to be desired, as in one of the cases reported here, involuntary muscle spasm preceded the manifestation in striated muscle by at least 72 hours; and much suffering would have been saved the patient by an earlier diagnosis.

Tetany may be defined as a clinical condition in which there exists a marked hyperexcitability of the whole nervous system; and in some cases, by tonic spasms involving groups of muscles or the whole body musculature.

Certain physical signs may precede, follow, or accompany the spasm. Among these are Trousseau's sign, which consists in contraction of special muscles in the forearm and hand. It may be elicited by applying a tourniquet, or better, the armlet of a blood pressure apparatus, and inflating, so that a pressure of about 200 mm. of mercury is made on the nerves in the arm for several minutes. The response usually appears in 3 to 4 minutes, developing slowly thereafter, manifest first by straightening and stiffening of the fingers, followed by adduction of the fingers and thumb, with production of the typical "accoucheur's" hand. Chvostek's sign consists in contraction of all or part of the muscles of expression on tapping the facial nerve of the corresponding side. Contraction of all the muscles of one side of the face is classed as Chvostek's I; slight movement of the nostril and drawing of the angle of the mouth, as Chvostek II; and slight twitching of the muscles at the angle of the lips, Chvostek III. Erb's phenonemnon is probably the most constant and accurate of all, and consists in an increased response to galvanization of the motor nerves.

Although the exact etiology of this clinical condition has not been determined, observations on its occurrence as an entity, or accompanying certain diseased states, have been reported for many years. The classification of von Frankl-Hochwart as quoted by Barker, gives in a few words, the varied conditions under which tetany may occur[1].

1. In otherwise normal, healthy individuals, so-called idiopathic tetany.
2. In experimental or accidental removal of the parathyroids (parathyreopriva). This we now

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*From the Departments of Medicine and Pathology, Providence Hospital, Seattle, Wash.

know includes the tetany following goiter operations and is due to removal or injury of the parathyroids rather than the thyroid proper.

3. In gastrointestinal conditions, notably pyloric stenosis.
4. In association with infections.
5. In association with intoxications.
6. In pregnancy and lactation.

While the clinical manifestations in these conditions are not the same, all have one outstanding feature in common, viz. neuromuscular hyperexcitability; consequently investigations into the cause of tetany have resolved themselves into a study of the underlying cause of this hyperexcitability. In general these have followed four lines:

1. Parathyreopriva.
2. Disturbance of mineral metabolism.
3. Disturbance of acid-base balance.
4. Protein intoxication.

Complete removal of the parathyroid glands, or agents that bring about a cessation of their function, have long been recognized as a cause of tetany. While the parathyroid secretion was believed at first to prevent tetany through central nervous control, later work tends to show that it probably acts through one or more of the above given underlying causes.

Sabbatani and Loeb stimulated investigation into mineral metabolism in tetany by the observation that calcium salts, when applied to the brain of an animal in tetany, inhibited very quickly the muscular spasm, while salts of potasium or sodium increased the existing symptoms. MacCallum and his co-workers[2], [3], investigating further along this line, report a marked decrease in the calcium content of certain of the tissues of animals in tetany following parathyroidectomy, notably the brain and blood, with a slight increase in the calcium elimination. Certainly, the intravenous administration of soluble salts of calcium, relieves the tetany so produced. Similar results are obtained with salts of barium and magnesium which, however, are too toxic for use[4]. Sodium salts increase the nervous irritability, as do all substances, according to Loeb, which precipitate calcium in the body. MacCallum therefore believes that the symptoms of tetany are directly due to deficiency of calcium ions in the tissues, that the parathyroids are intimately concerned in the control of calcium metabolism; and perhaps act by neutralizing substances which otherwise combine with calcium and extract it from the tissues. Gross and Underhill[5] present data tending to show that lowered blood calcium coupled with increased blood potassium, are important in the causation of tetany following parathyroidectomy. In general the work along the lines of mineral metabolism seems to indicate that the ratio of the total monovalent ions, such as sodium and potassium, to the divalent ions, like calcium and magnesium, is especially important in maintaining neuromuscular balance, the monovalent ions acting as irritants and the divalents as depressants.

J. V. Cooke[6] was unable to confirm the findings of MacCallum with regard to low blood calcium as a constant factor in tetany, but notes an increase in the magnesium excretion preceding tetany. This, together with increased nitrogen and ammonia excretion, he offers as evidence of an acid intoxication due to a severe metabolic disturbance, to which the imbalance of ions is secondary[7], [8]. Kramer, Tisdall, Marriott and Howland, all working on infantile tetany, especially in relation to rickets where there is a known disturbance of lime metabolism, find decreased values for calcium in the blood in at least one-third of their cases[9], [10], [11], with definite increase of the phosphorus content as well. Tisdall[12], while accepting the importance of the calcium-sodium ratio, in the blood in the production of tetany, does not attach much weight to the phosphorus increase. Greenwald[13] attributes the convulsions of tetany to sodium poisoning, caused by a number of factors. The retention of phosphorus in tetany may be a factor in using up the calcium for its neutralization, as injections of phosphates are known to produce tetany, but only when the alkalinity of the solution rises.

This brings up the intimate relationship of the mineral content of the blood to its acid-base balance. Wilson, Stearns and Thurlow[14] are the first to offer evidence of alkalosis as a cause of tetany. They record increased alveolar CO_2 and PH of the blood (decreased H ion concentration), with decreased elimination of acids and of ammonia before tetany, with definite signs of acidosis following tetany, and they believe, caused by tetany[15].

The occurrence of tetany in two clinical conditions intimately concerned with acid-base relationship, (1) hyperpnea[16], and (2) overdosage with sodium bicarbonate, lends support to this theory[17]. S. B. Grant[18], in a study of 6 cases of clinical tetany, one produced by hyperpnea, record positive evidence of alkalosis. The changes may be explained as due to excessive loss of carbon dioxide through the prolonged deep breathing, leaving an excess of buffers, chiefly sodium bicarbonate, in the blood; so that the normal ratio of carbon dioxide (dissolved) to sodium bicarbonate expressed as $\frac{H_2CO_3}{NaHCO_3}$ becomes $\frac{-H_2CO_3}{+NaHCO_3}$, the plus sign indicating an excess of alkali. The body attempts, by increased excretion of alkali and decreased ammonia formation, to compensate for the increased alkali of the blood and maintain the normal hydrogen-ion concentration. Cases developing tetany after excessive administration of sodium bicarbonate, are believed by W. S. McCann[19], and by Tileston, Wilder and Underhill[20], to be due to definite alkalosis. They present as evidence, increased CO_2 combining power of the plasma in their cases. The excess of $NaHCO_3$ over H_2CO_3 is responsible for the tetany as in hyperpnea; the imbalance being due in this case to added alkali rather than to loss of H_2CO_3 as in hyperpnea, but the result is the same. Naturally, alkalosis will occur more readily in the presence of any alteration in kidney function tending to decrease the rapidity with which sodium bicarbonate is eliminated; hence the danger, recently emphasized by Kast, Myers and Schmitt[21] of excessive use of even so simple a substance as sodium bicarbonate in postoperative and other cases having impaired renal function.

The fact that bleeding an animal in tetany gives marked relief of symptoms, and the similarity of symptoms to those produced by toxins of the convulsant series (strychnia, ammonia, xanthin) led Beebe and others to suggest a toxin theory of parathyroid function in relation to tetany. This, in its essentials, ascribes to the parathyroid the function of detoxicating certain metabolic products, perhaps by producing enzymes that take part in nitrogen metabolism. In the absence of the parathyroid secretion, these toxic substances accumulate, producing marked hyperexcitability of the nervous system—the syndrome of tetany. This theory finds support in the observation of Haden and Orr[22], of increased nonprotein nitrogen in the blood in tetany following parathyroidectomy; also in intestinal obstruction[23],[24] which is similar if not identical[25],[26]. The increased nitrogen and ammonia elimination, with increased ammonia ratio, found by MacCallum, Cooke, and others, both in parathyroid tetany and in that accompanying pyloric obstruction, are offered as evidence of disturbed protein metabolism in both conditions. The finding of increased guanidine bases in the urine of dogs in tetany, as well as in children, follows along this same line. Experimental production of tetany by administration of guanidine, with evidences in the urine and blood of increased alkalosis, is taken by Watanabe and others[27] [31] as additional evidence of this mode of production of tetany. Greenwald[32] fails to confirm the findings of those who report increased guanidine bases.

In all of these theories advanced to explain the production of tetany, there is considerable overlapping. Thus, parathyreopriva, in its last analysis, resolves itself into a combination of all factors; protein intoxication, disturbed mineral metabolism, and acid-base balance. Even MacCallum, the most ardent advocate of calcium deficiency as the primary factor underlying tetany, admits that this deficiency may be caused by its utilization in neutralizing toxic products. It is a well known fact, too, that calcium salts are less highly ionized in alkaline than in acid solutions, so that even a slight trend toward alkalinity in the blood, may sufficiently decrease the available calcium as to produce tetany.

Two facts are to be noted as of possible significance: first that while calcium salts definitely relieve the symptoms of tetany, animals with total parathyreopriva die eventually of severe intoxication, though without a recurrence of the neuromuscular excitability; which would seem to indicate a possible toxin factor; second, in the tetany produced by high intestinal obstruction, there is a loss of chlorides[33] with or without vomiting, explained by workers in this line, as due to failure of the chlorides in the form of hydrochloric acid, to pass into the duodenum and be reabsorbed. The result is an exaggerated alkaline tide, such as occurs after meals, and is suggested as the cause of the tetany in this condition. Any explanation of the mode of production of experimental and clinical tetany must await further confirmation before it can be accepted as proven.

When one considers that in tetany there exists a hyperexcitability of the whole nervous system, motor, sensory and autonomic, it is readily seen that the disease may show itself in many different ways. That involuntary muscle may be the seat of the spasm without involvement of the voluntary, or vice versa, is now conceded; and if we rely entirely for our diagnosis on the typical "obstetrical" hand, or carpo-pedal spasm, many cases will be overlooked. In general we may say that the tonic spasm is nearly always bilateral; that in the attacks the patient does not lose consciousness; that involvement of the sensory nervous system is sometimes present as manifested by pain; and that the attacks last a variable length of time from a few minutes to several days.

The following cases are reported to show not only the different types of the disease, but different conditions in which tetany occurs.

CASE 1—Idiopathic Tetany

Female, married, age 48. F. H. negative P. H. no serious illnesses, no operations, mother of 6 children, all well. Menopause at 48. P. I. duration 4 years, intermittent, onset sudden. Feeling of suffocation with sensation of choking accompanied by difficulty in swallowing and breathing. At the same time, there is severe cramp-like pain in both forearms and hands. Attacks last from 10-20 min. and are followed by great weakness lasting about a day. There is no warning of an impending attack and patient does not know what induces them. Examination (normal findings omitted) thyroid slightly enlarged, small adenoma in isthmus. Heart enlarged ½ inch to left, soft systolic murmur over base, B. P. 170-90. Chvostek II present. Urine, acid, 1.012, albumin trace, few hyaline casts. Dye excretion 40% in 2 hours, blood non-protein nitrogen 36 mg. per 100 c.c.; blood calcium 5.6 mg. About a week after patient was first examined, she was seen in a typical attack. It came on while she was lying down. There was loud stertorous breathing with retraction of the soft tissues of the neck, and very slight cyanosis of the lips and ears. Muscles of both forearms were in a chronic spasm and typical "accoucheur's" hand was seen. Positive Trousseau present for several days following, but not noted at time of first examination. On a low protein diet and calcium glycerophosphates by mouth, she has been free of attacks for over 1 year, except during a short period when she discontinued treatment. How much the slight nephritic change here may have had to do with the lowered blood calcium and the tetany, is difficult to say. The patient still has the urinary findings with no other symptoms. Lowered blood calcium is known to exist in uremia and certain types of nephritis (34). Since this is accompanied by lowered plasma proteins, to which the calcium is probably bound, there is no change in the free calcium, hence no tetany. Determination of plasma proteins was not made in this case, but the presence of tetany would seem to rule out the nephritic change as a cause of the lowered blood calcium, and it seems probable that it had no relation to the case as a whole.

CASE II—Tetany Accompanying Intestinal Obstruction

Female, married, age 35, F. H. negative P. H. appendectomy 12 years ago; one former attack of present complaint 8 years ago, lasting 6 days; mother of 1 child, age 11; accidental miscarriage 10 years ago; no pregnancy since. Menstration normal. P. I. Began 1 day previous to examination, onset sudden; with severe pain just below ensiform, radiating to back, paroxysmal in character, lasted for 2 hours, and disappeared suddenly, returning 1½ hours later with nausea and vomiting, which persisted. Vomitus bile stained, contained no blood, large in amount. Emesis gave relief from pain for periods as long as 1 hour. Bowels moved shortly after onset of pain, no blood or mucus noted. Later repeated enemata produced no evacuation and no gas was passed per rectum. On admission to the hospital, in addition to the abdominal symptoms, she complained of severe cramping pain in both legs, extending into the feet and toes, paroxysmal, lasting from 5 to 20 min. Observation during the pain showed the calf muscles rigid, foot extended, and toes slightly flexed (pedal spasm). Temperature 99.3; pulse 100, respiration 26 (normal findings omitted). Abdomen slightly distended, increase in muscle tonus throughout, most marked in upper quadrant; greatest tenderness just to the right of the umbilicus; no mass palpable. Reflexes, deep hyperactive, Chvostek II present, Trousseau positive; urine negative, blood calcium 7.5 mg. per 100 c.c.; non-protein nitrogen 31 mg. per 100 c.c; leukocyte count 111,200 polys 88%. As soon as the laboratory report of low blood calcium was received, 15 gr. calcium chloride was given intravenously. Up to 5 hours after its administration, there was no relief of symptoms; abdominal pain, nausea vomiting and obstipation persisted. A diagnosis was made of intestinal obstruction with tetany. Operation, performed by Dr. Harry Shaw, disclosed kinking of the last 8 inches of the terminal ileum, forming a volvulus; portion of the ileum adherent deep in pelvis. The loops were freed; patient made an uneventful recovery and left hospital in 2 weeks. At time of discharge neither Chvostek's nor Trousseau's signs could be elicited and blood calcium was normal (9.5 mg. per 100 c.c.).

CASE III—Tetany with Chronic Cholecystitis

Female, single, age 26. F. H. negative. P. H. typhoid 6 years ago, appendectomy 5 years ago; menses began at 13, regular. Pain in lower abdomen begins 1 day before flow and lasts for 2 days after, frequently so severe that she is forced to go to bed. P. I. began 6 months ago, with bloating after meals and gaseous eructations. Frequent pain in epigastrium after eating, accompanied by nausea; emesis always gave relief from pain. During the past month, the pain has been more frequent, radiating to back and shoulder blades, and is more severe. Has lost 34 lbs. in weight in past 6 months. Examination (normal findings omitted) very thin young woman, visceroptotic type, abdomen shows some rigidity of both recti, most marked in right side, very tender over gall bladder. Murphy's sign positive. Presence of Chvostek's sign not noted. Routine B. P. determination did not disclose a positive Trousseau, though inflation was not carried to the required degree (200 mm. mercury) nor maintained as long as necessary. X-Ray examination disclosed · a persistently deformed duodenal cap, with stomach emptying in normal time. Outline of gallbladder could be determined from roentgenogram, enlarged and evidently thick walled. No calculi noted. A diagnosis of cholecystitis with peripyloric adhesions was made and a routine Ewald meal removed to complete the examination. During the passage of the Rehfus tube, she suddenly complained of very severe pain in the abdomen. The tube was removed immediately but pain continued with nausea and vomiting, which gave no relief from the pain however. During the next 4 hours morphine grains ½ gave only partial relief, and all symptoms returned in original severity as soon as the effect of the opiate wore off. Temperature 100.6, leukocyte count 12,400, polys 84 per cent. Immediate operation was advised and consented to. (Dr. Harry Shaw, surgeon). At operation, gall bladder was found enlarged, walls thickened, and plastered to pylorus and first portion of the duodenum. A cholecystectomy was done, and during removal it was remarked that there were few if any signs of an acute exacerbation of an old infection. Patient was returned to her room in good condition, and, as soon as consciousness returned, complained of the same intense pain radiating thruout the abdomen. On the third postoperative day, nausea, emesis and abdominal pain were, if anything, more severe than before operation. At this time, slight involuntary twitchings of the muscles of the forearms and legs were noted. Trousseau's sign was found strongly positive. Chvostek III present. Blood calcium 4.7 mg. per 100 c.c. Calcium chloride, 15 gr. was given intravenously and within 2 hours, vomiting ceased, pain was less though still present. A second injection of grains 10, 12 hours later gave almost complete relief.

That the passage of the Rehfus tube had anything to do with producing the pain, is difficult to believe. It probably was a coincidence. Undoubtedly the pain was due to tetany, causing either a gastro-spasm or an entero-spasm. At no time was the patient jaundiced, so that there is little likelihood of an overlooked common duct stone. Had the physical signs been elicited earlier, much suffering could have been saved this patient. Even though operation disclosed organic pathology as diagnosed, it evidently was not producing all the symptoms present. A special point of interest in this case is the development of involuntary muscle spasm due to tetany several days before voluntary musculature was involved.

A somewhat similar case has been reported by Jacob Kauffman (35) in which there was an obstruction of the common bile duct due to spasm together with choledochitis. No relief followed operative drainage. After blood examination revealed a decrease in free calcium, intravenous injections of a 10 per cent solution of calcium chloride were used with prompt relief of all symptoms.

CASE IV—Tetany Following Thyroidectomy

Female, age 32, single, operated by Dr. George Horton for an adenoma of the thyroid producing pressure symptoms. Partial thyroidectomy was done. The following day a secondary hemorrhage occurred necessitating reopening of the wound. Gauze packing was inserted and removed two days later when the wound was sutured. During the next 24 hours, patient vomited twice, and complained of difficulty in swallowing. She was then free from all symptoms till one week later when vomiting and difficulty in swallowing reappeared together with extreme restlesness and muscular twitching. Emesis was accompanied by very little nausea and consisted principally of mucus. The dysphagia was most marked on taking liquid and semi-solid food. Occasionally solid food by repeated swallowing could be forced into the stomach. At this time patient was seen in consultation. Temperature 99.4, pulse 120. respiration 28. Positive Trousseau could be elicited as well as Chvostek II. Blood calcium content of 2.5 mg. per 100 c.c. was found, the lowest amount we have found recorded. The dysphagia was undoubtedly due to oesophageal spasm, permitting a bolus of solid food to be forced by it but obstructing the passage of liquid and semi-solid food for purely mechanical reasons. It is probable that parathyroid secretion was diminished or completely suppressed for a short period by the pressure of the gauze packing necessitated by the hemorrhage. All symptoms disappeared after the intravenous administration of calcium chloride daily for 5 days. During the following 2 months, patient gained 25 pounds in weight and was free from all untoward symptoms without further treatment, which is sufficient evidence that the parathyroids were not removed or permanently injured.

It is to be noted that of the cases reported, all have occurred in women. According to available statistics, males and females are equally subject to tetany; certainly, our cases are too few in number from which to make any deduction. All had a blood calcium content considerably below the normal, taking as the norm 9 to 11 mg. per 100 c.c. of blood[36]. At the time these cases were seen, facilities for making complete laboratory investigations were not available. We are of the opinion that the underlying principles of protein intoxication, disturbance in acid-base balance and mineral metabolism given as the probable etiologic factors in tetany, have a much wider range in the production of symptoms thought to be "functional" in nature, than we have been led to believe. With this in view, a more detailed and thoro study is in progress with the idea of obtaining evidence as to their role in diseased states characterized by spasticity due to unknown agents.

Note: Bibliography will be found in reprints.

MEDICAL PROBLEMS OF THE WORKMEN'S COMPENSATION LAW*

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Mr. President, and gentlemen of the Idaho State Medical Association:

The philosophy on which the Workmen's Compensation Acts of the various states is founded is that the wear and tear of human beings in modern industry should be charged to the industry just the same as the wear and tear of machinery has always been charged, and while the compensation is primarily chargeable to the industry and consequently to the employer or owner of the plant, eventually it becomes a part of the fair money cost of the industrial product and to be paid for by the general public purchasing such product. In the enactment of these laws legislatures have recognized that the common law remedies for injuries sustained in certain industries were inadequate, insufficient and unjust, and therefore a substitute was provided by which a more equitable adjustment of such losses could be made under a system which was intended largely to eliminate controversies and litigation and place the burden of accidental injuries incident to such employment upon the industries themselves, or rather upon the consumers of the products of such industries. Forty-two states of our Union have passed Workmen's Compensation Acts. These acts all follow and carry out the same general principle, to-wit, that workmen shall be compensated for accidents arising out of and in the course of their employment. On account of the diversity of these acts and for the obvious reason that many of the provisions of such acts would not be of interest here, I shall confine my remarks to the Workmen's Compensation Act of the State of Idaho, with particular reference to the mechanical problems presented in connection therewith.

The Idaho Act provides that if a workman receives a personal injury by accident arising out of and in the course of any employment covered by the act, his employer or the surety shall pay compensation to the injured person. The act further provides that the words "personal injury by accident arising out of and in the course of the employment" shall not include a disease except as it shall result from the injury. The effect of this provision is to exclude what are known as "occupational diseases."

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The primary object and purpose of all compensation laws should be to restore the injured workman to his normal health, if possible, and pay compensation until he is so restored. A compensation law that fails to require the employer to furnish adequate medical aid, subject to reasonable expense, is seriously defective. In nearly all of the states the employer is liable for furnishing medical services, and in four states—Massachusetts, Ohio, Rhode Island and Washington—the employee has the right to choose his own physician. Most of the acts, including our own, have a provision that in the case of refusal on the part of the employer to furnish medical attention the workman may select his own physician at the expense of the employer, but if the employee does not accept medical service offered by the employer and engages his own physician, he alone is responsible for the payment of such services. As a matter of fact, there are no hospital contracts entered into between the employer and his workmen, the selection of a physician or surgeon is left largely to the choice of the injured workman. By this I mean that the employer in most instances is not active in attempting to influence the workman to secure the services of a physician other than the one selected by the workman. We know, as a matter of fact, that in nearly all instances a workman is asked whether or not he has a physician that he desires called in case of an accident, and in most instances we find that the physician or surgeon employed is the choice of the workman.

The Idaho act provides that employers and workmen may enter into mutual contracts or agreements providing for hospital attendance and for medical and surgical service. These contracts prevail to a large extent in the northern part of the state where large numbers of workmen are employed in the mining and lumbering industries. In order to eliminate controversy between the employer and the workmen as to the proper physician and surgeon to be consulted the Board has required that written agreements or waivers be secured from the workmen providing that the workmen waive the benefits provided under Section 6229 of the law and agree to accept the physician who has the hospital contract. Until these written waivers were required it very often happened that workmen would secure the services of a doctor other than the one having the hospital contract, and after hospital and medical expense was incurred there would be a dispute as to who was liable for the payment of the bills. The fact that the workman signs an agreement or waiver tends to do away with these controversies, and as a result the Board has very little difficulty in cases where hospital contracts prevail.

In some of the larger states where many thousands of industrial workers are employed, some of the Boards maintain medical departments employing their own physicians and examiners, who take charge of cases when it appears that the workman is not progressing to their satisfaction. In Idaho no such medical department is provided, and the Board does not even have a medical advisor. It sometimes becomes necessary for a workman to be examined by disinterested physicians, and this is generally done at the expense of the employer or the workman.

A study of the various compensation acts brings to light the fact that when these acts were first placed upon the statute books the element of medical expense and medical treatment was not considered and the framers of these acts failed to realize the large and important element that medical service would play in the final adjustment of these cases. Even at the present day some of the acts provide a medical allowance of an amount as low as $50, and many of them only provide medical attendance for a period of two weeks and in the amount of $100. In states where the medical provision is so meager it becomes necessary for the injured workman to pay out a portion of his scanty compensation for the settlement of medical bills incurred in restoring him to health.

Idaho has what might be termed an unlimited medical provision. The law provides that the employer shall furnish reasonable medical, surgical and other attendance. What constitutes reasonable treatment is to be determined after a study of all of the facts in the case and after a consideration of the injury sustained by the workman. We have had cases where the workman has been treated for a period as long as one year and where the medical expense was considerably more than $1000.

The question of medical fees in compensation cases is one that has caused a great deal of controversy, and there has been some opposition from the medical profession as to the propriety and justice of fee schedules promulgated by Industrial Accident Boards. In the State of Idaho we have a fee schedule which was adopted by the Board after consultation with a committee appointed by the State Medical Society. This schedule compares very favorably with the schedules adopted in other states. In most instances the fees allowed are larger than in the majority of the states having medical schedules, and in only two or three states are larger fees allowed than those provided for in the Idaho schedule.

The Compensation Act provides that all fees and other charges for treatment and service shall be under the control and regulation of the Board, and the Act further contemplates that physicians and surgeons in making up their bills for treatment of injured workmen shall take into account the charges which prevail in the particular community where they reside, and they should also take into account the fact that they are certain to receive payment for services rendered in cases properly coming under the Workmen's Compensation Act, and in fixing their charges they should take into consideration this increased security of payment because they are not subject to the risks of non-payment of fees such as they incur in private practice. The Board does not have a great deal of difficulty in fixing fees for specific operations or stipulated surgical service. The bulk of the controversies are the result of the practice on the part of some physicians and surgeons of charging for several surgical dressings on the same day. The apple growers have a slogan to the effect that an "apple a day will keep the doctor away." Apparently some of the doctors believe that several dressings a day will keep the germs away. We have had before us for adjustment bills rendered by physicians and surgeons where it appears that wounds have been dressed three times a day for a considerable period and then twice a day for 15 or 20 days and then once a day for a long period, and the charge made was the regular rate for each specific dressing. When the charge for these dressings is added to the fees provided for the surgical service and the hospital bill is included, the medical expense in many of these cases is a very large item—in fact, our records show that about 40 per cent of all of the money paid out by the various employers goes for medical expenses. In addition to this the employer is required to pay the workman for any permanent injury that he may sustain as a result of his accident in addition to the compensation for the period while he has medical care.

Considerable difficulty is often experienced by the physician in attempting to estimate the amount of permanent disability sustained by the workman and to report to the Board in such a way that the disability may be accurately determined in accordance with the section of the Idaho Act which provides specific indemnities for certain injuries. In the case of injuries covered by the specific indemnity schedule there is no difficulty, but in cases where a workman sustains a permanent injury not listed in the schedule considerable difficulty confronts the physician. We have had cases where a workman has sustained severe injuries to his spine, which resulted in a certain amount of deformity and rigidity. There is no schedule which provides for such an injury, but the law contains this provision: "In all other cases in this class (referring to the specific indemnity schedule) compensation shall bear such relation to the amount stated in the above schedule as the disabilities bear to those produced by the injuries named in the schedule;" in other words, in the case of an injury such as I have just referred to—an injury to the spine—it becomes necessary for the physician to compare the injury sustained by the workman to some injury named in the schedule This is very difficult to do. For instance, we have had cases where workmen have suffered the loss of a kidney or a serious and permanent injury to the lungs or a permanent injury to the skull. To compare the loss of a kidney to the loss of a hand is unscientific to say the least. The California law has a very scientific provision for compensating for permanent disabilities. In brief, their act provides that disabilities shall be rated in percentages, a disability of one per cent entitling the workman to four weeks compensation and for each additional per cent of disability he likewise secures four weeks additional compensation. If the Idaho act contained a provision similar to this it would be comparatively easy for the physician or surgeon to estimate the workman's permanent disability in terms of percentage. It would be a mere matter of mathematics to determine the amount that should be paid to the workman on account of his permanent injury.

The Idaho law contains no reference to dental treatment, and this is a problem which comes before the Board very frequently. Workmen often lose their natural teeth by being struck in the mouth, and the question came up very early in the administration of the act as to whether or not the workman was entitled to dental treatment and who was to pay for such treatment. This question first came up in a case where a hospital contract prevailed. The Board decided that the contract doctor was not liable for the replacement of the teeth, that he could only be charged with the expense of repairing and treating the bruised tissues, and that the cost of replacing the teeth should properly be borne by the employer, and that the cost of replacement was in the nature of specific indemnity, that is, the employer could reimburse the man in money for the cost of the dental work or could provide dental services and pay the bill.

The questions of whether or not a workman is entitled to compensation where an alleged hernia follows as a result of an accident are continually before the Board. The law provides that the hernia must appear suddenly and immediately following the injury and that it did not exist in any degree prior to the injury for which compensation is claimed. There are many writers who assert that the cases of real traumatic hernia are extremely rare. Many of the surety companies carrying risks for various employers have endeavored to secure from the Board a holding that if it can be shown that there was a pre-existing sac that this fact should bar the workman from receiving compensation in case of hernia. The Board has declined to adopt this view. Our position is that where it can be shown that there was no visible evidence of hernia prior to the injury and the workman has been able to perform his work without the use of a truss or other artificial support, and after an injury a hernia appears, that he is entitled to compensation even though what might be termed a "potential hernia" existed prior to the alleged injury.

There have also been claims presented where workmen asserted that appendicitis had been caused as a result of a strain. These cases are viewed with suspicion by the Board, and in most instances claims for compensation on account of appendicitis produced in this manner have been denied.

Considerable controversy was had over the question of whether or not a tick bite was an accident. For a considerable period of time surety companies paid claims for disability sustained by sheep herders as a result of sickness caused by the bite of the sage tick. The Board, however, holds at this time that spotted fever is a disease and that the so-called bite of the tick is not to be classed as an accident within the meaning of the Workmen's Compensation Law of the State of Idaho.

The Board is given authority under the provisions of the Workmen's Compensation Law to require workmen to submit themselves to qualified physicians and surgeons at reasonable times and places in order that the Board or the employer may be properly informed as to the condition and progress of the injured workmen. It is impossible for the members of the Board to be advised as to the exact condition of injured workmen without the assistance of qualified medical opinion. For instance, a workman might present himself to the Board and exhibit a wrist which would appear swollen and with a certain amount of ankylosis, and the injury might appear to a layman as being permanent, while an examination by a qualified physician would reveal the fact that the workman would recover entirely from his disability. In most cases, however, no difficulty is encountered in prevailing upon the injured workman to submit to these examinations. It very often happens that after the employer has paid compensation for a considerable period of time and from observations made by the employer, the employee is recovered and able to perform work and labor. Upon receipt of a recommendation from the employer that the case be closed, the workman is informed, and it very often happens that he will insist that his disability still continues, and in such a case a hearing is necessary in order to determine the facts. We had a case recently where a workman was injured in a mine and sustained very severe injuries in a fall of about one hundred feet down a chute. He really made a remarkable recovery considering the severity of his injuries. The employer, after paying compensation for a number of months, felt from his independent investigation that the workman had recovered and was able to return to work. The Board in cases of this kind holds that the burden of proof is upon the employer to show that the disability has ceased. In this particular case considerable testimony was presented on both sides, and the Board determined that from the evidence produced the employer had failed to show that the workman was able to perform labor. Accordingly compensation was continued for a number of weeks. Later, however, the company again renewed their petition to be discharged, and the workman of his own volition went to an individual who styled himself a "scientific manipulator," and this gentleman after an examination of the workman's spine informed the workman that eleven of his vertebra were displaced, and he proceeded to adjust the vertebra, and after a few subsequent treatments the workman returned to his employer and gave visible evidence of his ability to return to work. However, in view of the trouble that the employer had had with this particular man he refused to re-employ him. The workman thereupon left the community and was later arrested in Salt Lake City with a group of men who had attempted to blow open a safe in the Orpheum Theater of that city. The subsequent history of this case convinced the Board that the employer was right in his original contention and that malingering and shamming had been indulged in by the workman with complete success. In most cases, however, if there is no real, visible disability, there is a mental condition which is very potent and brings about conditions which preclude the work man from resuming his former employment, and in these cases compensation must be continued until a method is devised by which the workman can be convinced that he has recovered and is able to return to his employment. In many cases light work is furnished, and the workman is gradually brought to the position where he will admit that he is able to return to his former job.

We have had cases where workmen have become dissatisfied with the treatment furnished by the physician and voluntarily abandon the hospital and medical treatment provided by the employer. We had a case of a man who received very severe injuries by being thrown from a horse. He was receiving splendid care in a hospital, but because of the fact that he was a persistent violator of the rules and regulations of the hospital he became dissatisfied and left the hospital and the service of his physician and was later discovered in a hospital in the state of Utah. In this case the surety was permitted to suspend the payment of compensation owing to the refusal of the workman to accept the treatment provided by his employer. This course on the part of the surety is justified under the provisions of our act.

In a case coming before the Board for adjustment the question of whether or not communications between the physician and workmen were privileged was raised. The Supreme Court of the State of Idaho has held that knowledge gained by a physician in treating a patient is a privileged communication and that the physician is not permitted to testify in a case where the patient is a party without the consent of the patient. In the particular case referred to by the Board it was held that in the adjustment of disputes between workmen and their employers information gained by a physician in treating an injured workman under the provisions of the law was not privileged, and the reason for this holding was that the statute in question refers to testimony before courts of record. The Industrial Accident Board is not a court of record, and its proceedings are not trials. The findings of the Industrial Accident Board are made after an inquiry or investigation, and it would seem that the provisions of the Idaho acts with reference to privileged communications would not apply.

In the state of Idaho a workman is not barred from receiving compensation because of the fact that at the time of his injury he was suffering with a pre-existing disease. The Supreme Court of the state has held that an employer takes a workman as he finds him. It makes no difference whether the workman be infirm or afflicted with disease. In any case where we find a workman performing his tasks and as a result of an injury by accident he is incapacitated, he is entitled to compensation notwithstanding the fact that his disability is due to disease which was lighted up and aggravated by the injury.

A workman in the state of Idaho is not entitled to compensation for disfigurement unless the disfigurement impairs his ability to work or his ability to secure employment.

In injuries of the eye which result in a loss of vision which can be corrected either partially or wholly with the use of proper fitting glasses, the Board has held that the workman is entitled to payment for specific indemnity based upon the loss of vision without the use of glasses. This seems to be the general rule, although some states have gone so far as to hold that if the defect in vision can be entirely corrected with the use of glasses the workman is entitled to no compensation.

There is no provision in the Workmen's Compensation Act of Idaho by which the Board can require that an autopsy be held. We had a case in northern Idaho where a workman died after receiving an injury, and it was asserted by the surety that his death resulted from a disease and was not caused by the alleged injury. In this case the surety demanded that an autopsy be held, and the widow of the deceased refused to acquiesce in this demand. If an autopsy had been held it probably would have been possible to determine accurately whether or not the alleged injury did really contribute to the cause of death. However, in view of the fact that the Board had no authority to order the autopsy, the case was submitted upon the evidence produced by the parties and expert testimony of medical witnesses and the findings of the Board based upon the testimony.

In conclusion it might be well to point out that the enactment of Workmen's Compensation Laws introduced a new element into the relations of the physician and the community. The laws make mandatory the providing of necessary medical, surgical and hospital service to injured workers. They also either directly limit expense for which the employer is liable for such treatment, or empower the administration bodies to pass upon all such fees. While the law requires that medical service shall be furnished by the employer, as a matter of course, this requires the services of a physician. This introduces a problem which has not heretofore been in evidence in the activities of the medical practitioner. Being the only one in the community capable of rendering such service, there is imposed upon him the duty of contributing from his skill and experience to the treatment of such cases; and, as the compensation for such treatment is definitely limited or restricted by law, it becomes necessary for the physician doing this work to readjust his conception of medical ethics to this new social obligation which is demanded of him.

RECENT ADDITIONS TO OUR KNOWLEDGE OF THE ETIOLOGY AND TREATMENT OF RICKETS*

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In presenting this paper I wish to disclaim any attempt at originality; nor is it possible in the scope of such a paper to make a complete review of the amazingly voluminous literature on rickets. I shall attempt only a brief review of the literature and to give the conclusions one must reach after a study of the subject.

Rickets may be defined as a disease of metabolism, occurring chiefly in the first three years of life, and characterized clinically by excessive sweating about the head, beading of the ribs, craniotabes, pallor of the skin and mucous membranes, increased nervous irritability, impaired muscle tone, delayed dentition and deformities of the bones. The disease is extremely common. Schmorl, of Dresden,[1] who reported the result of autopsy on a large number of children, found that evidence of the disease is rare in the bones earlier than the second month; that the onset is rare after the second year, but that between these two ages very few children escape. The disease may appear very early, a case being reported in a baby at the age of thirty-four days[2]. It has been estimated that in the cities of the temperate zone 75 per cent of all babies show some evidence of the disease. It is impossible to make an accurate estimate of the percentage in this locality, but it is probable that more rather than less than 75 per cent are affected. The disease is rare in the tropics, in the arctic circle and at high altitudes.

The symptoms, in the order of their appearance, are: sweating, pallor, restlessness, beading of the ribs, craniotabes, loss of muscle tone, delayed dentition and bone deformity. Bone deformity is thus a late symptom of the disease. The early diagnosis may present some difficulty. Craniotabes is an infrequent and unreliable sign. Hess[3] believes beading of the ribs to be a reliable, early sign. This sign with the pallor, sweating and restlessness usually suffice for a diagnosis, but the x-ray and chemical examination of the blood serum are great diagnostic aids. Recently, Hensch and Kramer[4] have attempted to use the increase in the diastase-content of the urine, which is found in a very large percentage of rachitic infants, as an aid to early diagnosis. This laboratory procedure may prove to be of real value.

It is probable that the disease affects all of the tissues of the body, but pathologic changes are noted chiefly in the bones. These are due essentially to failure of the normal processes of calcification of the bones. This failure results in the production of an excessive amount of osteoid tissue at the centers of development. Normally the process of calcification is an orderly one, and the lime salts as deposited serve as a guide to the development in the blood vessels, and these in turn stimulate the orderly arrangement of the bone trabeculae; but in rickets, in the absence of calcified areas to serve as a guide, the blood vessels grow in a disorderly manner, and as a consequence the epiphyses of the bones are larger than normal, and composed of osteoid tissue, connective tissue and an excessive growth of blood vessels, all arranged in an irregular manner. The shafts of the long bones, because of a lack of calcification, are softened and all manner of deformities may result. Because of overgrowth of osteoid tissue at the centers of ossification, the square, flat-topped head, characteristic of rickets, develops, and the ends of the long bones become much enlarged. Dentition may be more or less delayed, and the teeth are apt to be poor in quality and decay almost as soon as erupted; the muscle fibers are small, and as a consequence the muscles are soft and flabby; the blood, besides showing characteristic secondary anemia, contains a reduced percentage of calcium, or of phosphorus or both.

Normally the blood serum contains from ten to eleven mg. of calcium per 100 c.c. This is remarkably constant in all animals in a state of health. In rickets, it may be reduced to less than one-half the normal amount. The inorganic phosphorus of the blood serum varies considerably in normal children, but is usually between four and seven mg. per 100 c.c., commonly at 5 or 6 mg. In rickets it may be greatly reduced. In the type of rickets, with which tetany is associated, the serum-calcium is markedly reduced, the phosphorus remaining high. In another type the serum-calcium is high, but the phosphorus is reduced. Shipley, Park, and others[5] advanced the idea that there are thus two kinds of rickets, and stressed the importance of the proper proportions of calcium and phosphorus in the diet. They found that high calcium diet with low phosphorus, or high phosphorus diet with low calcium, will produce rickets in animals kept in room-light.

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* Read before the Thirty-fifth Annual Meeting of Washington State Medical Association, Everett, Wash., Aug. 12-14, 1924.

Many hypotheses have been advanced in the attempt to find the cause of rickets. The most prominent of these is a faulty diet. The lack of fat, lack of protein, excessive carbohydrates, lack of vitamins, lack of calcium, lack of phosphorus and other dietary irregularities, have all been given as causative factors, but it has been well known that a very great many cases of rickets occur when no fault can be found in the diet, and to explain these cases heredity; endocrine disturbances, disturbances of the acid-base equilibrium of the tissues, bacterial invasion, faulty hygienic conditions, and many other alleged causes have been cited, without any definite proof as to their etiologic significance; so that most text-books refer to the complexity of the disease and state that the etiology is not definitely known.

During the past few years a great deal of experimental work has been done, notably regarding the specific faults of the diet and unfavorable hygienic conditions. A host of workers in this country and abroad have carried out innumerable carefully controlled experiments with animals, and have applied their findings to children. A discussion of the details of their work is impossible in this paper, but from all of the accumulated evidence, evidence which has been corroborated many times in every detail, it seems clear that most of rickets can be explained on the basis of gross defects in the diet or absence of sunlight; of these, the latter is tremendously the more important.[6] Not only has sunlight been found to be most potent in preventing or curing rickets, but it has been determined that sunlight owes its potency to the short ultraviolet rays.[7] This latter fact explains why room-light is so productive of rickets, since the short rays are completely cut out by ordinary window glass.[7] To a great extent these rays are also cut out by moisture and dust of the atmosphere at lower levels, hence the greater potency of sunlight at higher altitudes. Ordinary clothing also shuts out most of these rays. A single layer of thin white cotton cloth will, however, permit penetration of the rays sufficient to prevent rickets.[7]

Absence of adequate sunlight is such a logical explanation of the prevalence of rickets that one wonders that the profession has been so many years arriving at this discovery. Indeed, Palm[8], a British surgeon, thirty years ago made the statement that absence of sunlight is the chief causative factor in rickets, and detailed plans for preventing the disease. While practicing in Japan he observed the absence of rickets, in spite of the absence of fat from the diet, at that time believed to be an etiologic factor in England. Believing the abundance of sunlight in Japan to be an important element in prevention of rickets, he sent a questionaire to medical missionaries in various parts of China, India, Ceylon, Morrocco and other places. Their reports were uniform in detailing the miserable living conditions, the meager diet of rice with few additional articles of food, the absence of rickets, and the saving abundance of sunlight. One of his correspondents, William Huntley, had published a paper in 1889, in which he had forcibly set forth his belief in the potency of sunlight in preventing rickets and other diseases. Palm's remarkable paper, which so surely pointed the way to prophylaxis and cure of rickets, seems to have been completely overlooked until recently. In the cities of the northern states, practically all negro and Italian children, and a large percentage of Japanese children, have rickets, even tho the breast fed; while the disease is said to be infrequent in their native places,[8] where sunshine is more abundant, and more time is spent out-of-doors.

Von Hansemann,[9] in 1906, stated that rickets is due to domestication, basing his opinion on observations of animals, wild and in the state of captivity. Now it appears that his observation will apply to man, since when he lives in a more or less wild state, spending the greater part of his time out-of-doors, he escapes rickets, but when he becomes civilized and houses his family away from the sun, rickets develops. In other words, "essentially,[10] it seems, rickets is a disease of the 'light that failed.' "

Premature birth is in itself productive of rickets, and practically all premature infants are rachitic, even with good care. Conversely, the large baby born at or beyond full time is relatively quite resistant to the disease, in spite of faulty diet or environment. The development of rickets has a definite relation to the rate of growth—the more rapid the growth the greater the danger from rickets. This is what might be expected, since, if there is no growth, there is no demand for materials with which to make new tissues. A maintenance diet for a period of time is thus often a useful therapeutic procedure.

With more definite knowledge of the etiology of the disease, the treatment can be more rational. Not only is the treatment obvious, but it is also obvious that we must prevent rather than wait to cure the disease. But how can we supply an adequate amount of sunlight to very young babies in this climate? This is out of the question, except for a very brief period in the summer. However, artificial ultraviolet rays of short length are produced by the vapor mercury quartz lamp,[11] by the carbon arc lamp,[12] and several others, and the use of these rays are definitely preventive and curative of rickets.

There is, however, a remedy more readily available for the masses of the people who can not afford a change of climate or expensive treatment with ultraviolet rays. As has been said, rickets is rare in the arctic regions in spite of the long arctic night, but the natives of those regions are compelled in great part to subsist on fats and fish oils; and so we must take a leaf from the books of the Eskimos and give fish oil to our babies. Cod liver oil has been used empirically for a great many years and by many observers has been considered a specific in the prevention and treatment of rickets, and as is so often the case in the use of empiric remedies, science has finally established a rational basis for this remedy. Given to rickety infants, it raises the serum-calcium and serum-phosphorus to normal in exactly the same manner as do the ultraviolet rays of sunlight or the mercury vapor lamp.

To quote Park, Guy and Powers.[13] "It is an extraordinary fact that a substance containing neither calcium nor phosphorus, when administered to an animal whose blood is deficient in these elements, should have the power to cause the calcium or the phosphorus, as the case may be, to rise to, or nearly to, the level commonly regarded as normal and thereby to establish the normal equilibrium. Cod liver oil has this extraordinary power. In human rickets, for example, the organism has lost its power to assimilate and to hold lime salts; if fed in large amounts, these salts are simply excreted. Cod liver oil (or radiant energy) furnishes something to the body which enables it to assimilate and hold lime salts."

The exact mode of operation of cod liver oil, and for that matter of ultraviolet rays, has not yet been determined, but certain it is that rickets may be prevented or cured by the application of either of these methods, and that the one may be effectively used in the absence of the other. To what substance or substances cod liver oil owes its potency is not known, but it is known that it is not fat-soluble A[14]. Egg yolk[15] has been shown to have definite antirachitic value and may be fed to very young babies, mixed with milk. It should be used as a protective food, and not relied on for curative effects, as cod liver oil is much more potent.

The treatment of rickets and of tetany, by giving the chlorin-ion in the form of hydrochloric acid, calcium chloride, or ammonium chloride, has resulted in the relief of symptoms. This is accomplished by increasing the hydrogen-ion content of the blood serum, and a consequent increase in serum calcium. The result[16], however, is temporary, the serum-calcium dropping below normal on stopping the treatment.

There are all grades of severity of rickets, but the ravages of the disease are not measured by the extent of bone deformity. As is well known, rickety infants are peculiarly susceptible to all infections, more especially those of the respiratory tract.[17] Routine examination of all patients entering a children's hospital for six months, 613 in number, showed that 33.4 per cent had middle ear infection, while of this number that had rickets, 60 per cent had middle ear disease. The great prevalence of the disease undoubtedly contributes to a large extent to our infant mortality.

The chief purpose of this paper is to make a plea for a recognition of the facts that rickets is extremely common; that it begins at a very early age; that it may occur in spite of good diet and the best possible environment in this climate; and that it is prevented in most cases by the addition to the diet of small amounts of cod liver oil, or of egg yolk, or by the use of artificial ultraviolet rays, beginning in the first month of life. Finally, we must recognize the great therapeutic value of sunlight, and teach mothers to apply it to their babies.

Note: Bibliography will be found in reprints.

CONSTIPATION IN CHILDREN, CAUSES AND TREATMENT*

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There is perhaps no ailment that we are more often called upon to treat than constipation. Tho rarely directly dangerous to life, it is, nevertheless, a common and important cause of lowered resistance and a contibuting factor in many diseases.

The causes of constipation are numerous and varied and often the condition is due to the joint action of several causes. The condition is so easily recognized that the diagnosis comes to us ready made in the majority of instances. The information thus laid before us would suffice, were it not for the fact that intelligent treatment demands that the diagnosis include the cause or combination of causes which have operated to produce the condition. It should include also an understanding of the manner in which the normal physiology is disturbed, as well as a determination of the extent of the altered anatomy in the case under consideration.

ETIOLOGY

Let us consider first some of the more common causes in infants. These are:

1. An insufficient amount of food or water.
2. Vomiting, when excessive, operates the same as 1.
3. Reaction (chemical) in the intestinal tract. A formula which provides for enough calories, but in which there is a relative insufficiency of carbohydrate, favors the development of putrefactive tpes of organisms. With a putrefactive flora predominating, the reaction in the intestinal tract becomes alkaline, in the presence of which the fatty acids combine with the calcium and magnesium salts, forming large, dry soapy stools. On the other hand, when there is a sufficiency or relative excess of carbohydrate, the fermentative group of organisms are encouraged to develop, which favors acid reaction in the intestinal tract, in the presence of which fatty acids unite with sodium and potassium salts with the production of softer stools.
4. A physiologic disturbance of unknown etiology, characterized by hypertonicity of the automatic division of the vegetative nervous system. These babies have a tendency to general spasticity of muscle, are likely to have colic and cry a great deal. This condition is etiologically related to constipation for the reason that the pyloric and anal sphincters are usually involved as a part of this general tendency to spasm and overtonicity of muscle action. When pylorospasm is marked, excessive vomiting is the chief clinical symptom. This leads to constipation in the same manner that the giving of an insufficient amount of food and water would.
5. There is another condition peculiar to infancy that favors constipation, namely, the fact that the colon is relatively longer in proportion to the size of the cavity which it occupies than it is later on, and has also a relatively longer mesentery. This allows more opportunity for bends and kinks and in this manner the undeveloped colon may be a contributing cause of constipation.
6. Abuse of laxatives. The chief offender is castor oil. This drug has been sanctioned and sanctified by tradition since time immemorial and yet it is guilty as a primary cause of constipation in a large number of instances. There is no question but what castor oil can sweep the bowels clean; in fact, it does this so effectively that under ordinary circumstances another bowel movement should not be necessary for several days. As a rule, however, if another action is not forthcoming the very next day, the castor oil is followed up by some other laxative etc., etc. It is not long before the bowel refuses to respond to such minor stimuli as the mere presence of fecal material in the lower bowel but waits for the urge of laxative drugs.

In the case of older children, where the diet has become more varied and the environment more complex, we have still other etiologic factors to consider. Let us consider the following:

(a) Under this heading we may again mention the abuse of laxatives as an important cause.

(b) The taking for one reason or another an insufficient amount of food or water may also be included under this heading.

(c) Diet. Perhaps the greatest sin of the present age is the feeding in such generous amounts of highly refined carbohydrates. Not only is the annual per capita consumption of sugar the largest of any country in the world but nowhere else are cereals, of which hundreds of thousands of tons are annually consumed, so highly refined.

In the numerous sifting, bolting and bleaching processes, to which these are subjected, 75 per cent of all the phosphorous, potassium, iron, manganese and other mineral salts as well as the lecithins, phosphorized fats and vitamins, all of which are indispensable in the maintenance of normal nutrition, are removed. A more direct cause of constipation is the removal of the roughage which the intestinal tract is normally equipped to handle, upon which it depends for its normal mechanical stimulus to peristalsis. Impairment of the general nutrition is a natural penalty for such dietetic habits. It requires no very extensive knowledge of the subject to understand how indirectly impairment of the general nutrition should affect bowel function, and why a discarding of roughage should directly affect that function.

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The giving to children excessive amounts of milk is another rather common dietetic error that favors the development of constipation. I am aware that exception will be taken to this statement by many, for it is generally assumed by lay public and physician alike that too much milk cannot be given a child. I could, if time permitted, present much theoretical as well as clinical proof in support of this contention. However, it is well known that an exclusive milk diet will produce large, constipated soapy stools. When the diet consists principally, as it so often does of milk and refined cereals, the stool is altered very little and constipation is the rule. Not only is this type of diet unfortunate in its mechanical results on bowel function but is, as Lucas of San Francisco, and others have shown, disastrous in its effects on the general nutrition. The administration of a milk and refined cereal diet is one of the commonest causes of secondary anemia in children. I have seen a number of cases of extreme secondary anemias which apparently had no other cause, a fact confirmed by the remarkable improvement shown following the adoption of a more rational diet.

The sequence of events in such instances is somewhat as follows: A child has become anemic as a result of the above mentioned error in feeding. An anemic child has almost invariably a poor appetite and a lowered digestive capacity. From this point on we may trace any one of a series of vicious circles. One example will suffice. Impaired appetite and consequently the taking of insufficient amounts of food, as a result of which there is an insufficient amount of residue or waste for the bowel to act upon, and at the same time an insufficient supply of nourishment to sustain the normal secretory and muscular functions of the gastrointestinal tract; then constipation, more severe anemia, greater impairment of appetite, etc., in a never ending circle. More often anemia is only a part of a more complex clinical picture. Rickets with an associated anemia is another state of malnutrition of dietetic origin that has constipation as one of its prominent symptoms. When we stop to consider that the general flabbiness so characteristic of this disease is not confined to the skeletal muscles, but includes as well the musculature of the intestinal tract, the etiologic relationship becomes quite apparent.

Oft repeated disregard of nature's call to evacuate the bowel is an important primary cause of chronic constipation. In the infant a sense of distension of the rectum is the normal initiator of the reflex act of defecation which takes place forthwith. In the older child and adult who has acquired voluntary control over this as well as other reflex acts, the initial signal sometimes goes unheeded until the sensation disappears and is then usually forgotten. If this offense is often repeated, the normal sense in the rectum becomes dulled and leads to secondary causes of constipation which I shall discuss presently.

Before doing so, however, I want to make mention of one other primary causative factor which plays a much more important role in adult life than it does in childhood, tho it is even then a factor to be considered. It is probably known to every physician that there are some children who are all right in the summer, when they romp and play out doors all day long, but who become constipated in the winter time, when in attendance at school, or are otherwise confined indoors.

Let us now consider some of the local and general results of constipation which become secondary causes and which aggravate or help perpetuate a constipation once initiated by any one or a combination of the primary causes mentioned above. Let us for purposes of illustration assume a typical case and follow the sequel of events from a mild to a more obstinate form of the trouble.

(a) The lower bowel for one reason or another is not evacuated at the proper time. The rectum, which at this point is normally distended but fails to empty, has added to this more waste material from higher levels in the bowel. This may and often does continue until this portion of the human anatomy becomes enormously distended, so that instead of the rectum being as it normally should be a snug muscular pouch, the relative dimensions now are more like that of a balloon, the walls being sometimes stretched to a point of great weakness, if not in fact to actual paralysis.

(b) Furthermore, as long as fecal material remains in the rectum, water absorption continues. In point of fact, water absorption is accelerated by virtue of local irritation produced by hardened masses, and the longer it remains the more dessicated and harder it becomes and, therefore, more difficult to expel.

(c) It is not at all unusual after the evacuation of a large constipated stool to see a portion of it streaked with blood, which means that the anal mucous membrane has been injured. To guard against repetition of this insult the sphincter ani in a rebellious mood assumes a state of spasm more or less marked. Mild tho oft repeated injury of this kind results in due course of time in a state of involuntary chronic spasm and overdelevopment of the anal sphincter. Picture now the predicament in a chronic case, the lower bowel several days in arrears, with an accumulation of constipated fecal material in a compartment, the muscular walls of which are stretched, thinned, and weakened, and in addition to this a rebelling sphincter at the outlet which refuses to cooperate in an already difficult situation, and we begin to appreciate why the use of laxative drugs is only followed at best by temporary relief.

Idiocy, thyroid insufficiency and surgical obstruction, tho less common, deserve mention as other possible causes of constipation. These we shall not take up in detail but pass on to a consideration of treatment.

TREATMENT

Successful treatment must be directed not to the temporary removal of symptoms but to the causes. It is obvious to any one who has given the subject any thought or study that no routine or set form of treatment can be adopted, but that each case requires careful analysis. It is necessary, first, to determine the causative factors operating in that particular individual and then to determine as nearly as possible in just what respect the physiology and anatomy, upon which normal evacuation of the bowel depends, have been altered.

There are a few general measures that apply to every case. Of first importance is rational feeding, but even here one has to individualize and give specific instruction. That the introduction of a good hygiene and the correction of faulty habits is necessary should need no emphasis.

In a case of constipation due to too little food or water, the remedy is so obvious as hardly to require mention, were it not for the fact that such simple causes are frequently overlooked. In an infant, where insufficiency of food retention is due to vomiting, special attention must be directed to this. In a majority of such cases the thick cereal and milk formula works almost like magic.

If in the case of an infant it is a simple question of chemical reaction in the bowel, the trouble can usually be corrected by giving a larger percentage of carbohydrates. Clinically the addition of extract of malt seems to be most effective. This may be given in the water that the baby takes between feedings in amounts varying from a teaspoonful to a half ounce or more as needed.

Orange juice is often advised and is sometimes effective as a laxative, tho it is not unusual for it to have quite the opposite effect. The explanation given for the latter is that orange juice has a diuretic effect as well, leading to an elimination of a relatively larger amount of water by way of the kidney and leaving relatively less to be eliminated by way of the bowel, hence a drier stool. In older children, however, the juice of an orange with a full glass of water the first thing on rising in the morning is often helpful.

In the so-called hypertonic infant the treatment will depend upon whether vomiting is a prominent symptom or not. In this case the giving of thick cereal and the administration of atropin solution is found very useful. The latter is usually given in a 1 to 1000 aqueous solution in amounts varying from 1 to as high as 15 or 17 drops before each feeding. Personally I have never had the courage to give over 7 or 8 drops at a feeding and so cannot speak with authority regarding the efficacy of the larger doses. Atropin acts by virtue of its antispasmodic effect but has one untoward action, namely, a drying effect on the secretions and, so far as it does so, is constipating.

In the case of children past the age of infancy the treatment found most effective in my experience can best be illustrated by assuming a typical instance. In the milder forms of the trouble it is often surprising how readily it responds to simple measures, such as the taking of somewhat larger amounts of water, introduction of a rational diet and the establishment of regular habits of going to the stool. In the more aggravated forms our resourcefulness is often taxed to the limit in order to bring about satisfactory results.

Let us assume for our purpose a child suffering from constipation, in whom the various physiologic and anatomic abnormalities enumerated above exist, including pot belly, ptosed viscera, stretched and weakened rectal muscles, overdeveloped and spastic anal sphincter. I shall assume that the correct hygiene and diet have already been made use of and shall pass over this part of the treatment, except to sound one word of warning regarding the latter. Foods that are known to have a laxative effect are usually and very properly prescribed, but in the eagerness to effect a cure quickly they are often given in such excess as to produce an indigestion which in its effects on the health of the individual is often more disastrous than was the constipation. Jackson's Roman meal is a quite common offender which, while it has a most gratifying laxative effect, often produces even in small amounts abdominal pain and indigestion. For the child with the large abdomen and ptosed viscera which accompany it, a snug elastic abdominal binder which acts as a support will be found very useful.

In order to permit the rectum to shrink to its former size and regain its former tonicity and power, it must never be permitted to be filled beyond its normal physiologic limits but kept relatively empty. This is best accomplished by injecting for purpose of lubrication from one-half to one ounce of liquid petrolatum at bedtime, to be retained over night. If a sufficient and normal movement is not had the following morning, inject a few ounces of plain water. Repeat this water injection if necessary, at the same sitting until results are obtained. Let me say parenthetically that the injection of large amounts of water, say a quart or more as is sometimes done, is distinctly contraindicated, for while such an enema is followed by temporary relief, it further stretches an already over-stretched lower bowel and so aggravates an already bad condition. The evening injection of oil and small morning enema should be continued regularly until such a time as it is found that one or both can be dispensed with.

If there is an overdeveloped and spastic sphincter, Young's rectal dilators will be found very useful. Begin by using the smallest size, well lubricated, inserted very slowly into the rectum with as little force as possible. Forced or sudden dilatinon may produce injury, pain or fissure, and so further intensify the spasm which it was intended to correct. The dilator should be used in the morning at the regular bowel movement time and may, by virtue of the fact that dilating often serves to initiate the reflex act of defecation, replace the enema mentioned above. This, too, should be used regularly for a time and gradually, as the spasm is overcome, the next larger size, used, and so on until normal conditions prevail again.

It is well to remember that the bowel, like the rest of the individual, is susceptible to habit formation. Insist that the patient go to the stool at a definite and regular time each day, whether there is an inclination to do so or not. After breakfast is usually a convenient time to set aside for this function. It is essential that the child be given to understand just what he goes to the stool for and that he is to stay until the desired result is accomplished. If the attempt at normal evacuation of the bowel is not successful, then induce a movement by enema or dilator at this time. The patient should at all other times as well and for obvious reasons heed the first impulse to evacuate the bowels.

It will have been observed that laxative drugs have not been mentioned heretofore. In a great majority of cases they can be dispensed with to advantage. Occasionally I find in asthenic individuals that fl. ext. cascara, combined with small doses of nux vomica, are useful as adjuvants to other measures. When used, the drug is better given in divided doses, say three a day instead of giving it all in one dose. When laxative drugs are used they should be given regularly, usually over a period of weeks in the minimum dosage that will produce the desired effect and discontinue them very gradually.

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COMMON SENSE IN INFANT FEEDING*

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The advance in the science of infant feeding has been so rapid and varied and has involved so much detail work that in reviewing the literature fully and trying to follow it carefully step by step, the physician soon becomes confused. With food mixtures worked out from fancy equations, or else based on calories or percentages, the exact and practical method to follow is often a problem. Formulae involving top milk, lime water, various cereals, various kinds of sugar and starches, buttermilk, goat's milk, calories, vitamines, and percentages are so complex and difficult to understand it is no wonder that both mother and doctor are driven to Mellin's Food, Horlick's, Denno's, or other grocery shelf methods of feeding babies.

We feel that much of this confusion can be dispensed with, if each physician will first concede that fresh cow's milk is the very best food outside of mother's milk for the growing baby, and that it is unnecessary to resort to complicated formulae in order to arrive at the proper milk dilutions. The laity are inclined to think that the milk hardest to procure and entailing the greatest difficulty in preparation is always the most beneficial. On comparing the very simple formulae as to calories and percentages of fats, proteids, carbohydrates, with those arrived at by fancy equations, we find that the ultimate result is practically the same.

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Let us take a hypothetical case that will illustrate, in a way, the simple methods of feeding, as well as the methods of treatment resorted to in correcting any simple disturbances. A normal male child, born in a normal manner, from a healthy mother was given the usual maternity care. On the third day he was hungry, sucked his fists, cried hard a great deal of the time, had lost weight quite rapidly, and had a temperature of 105°; the skin was dry and parched, and the stools were scant and green in color. Physical examination added nothing to the clinical picture just described. A single dose of castor oil was given, together with a saline enema every four hours, and in addition to the breast feedings, 5 per cent dextri-maltose solution was given ad lib. The bottle was left with the child practically all the time for twelve hours, and he was allowed to drink constantly if he so desired. The clinical picture changed in twenty-four hours to that of a normal child, and recovery was uneventful. This was the so-called inanition fever of the new born. We see this condition a great many times each year, especially in cases where the milk is a little slow in coming in, and it is always relieved by plenty of water and glucose solution.

A few days later he became extremely jaundiced, as is the rule. No difficulty arose and no special treatment was used. The mother continued to nurse her baby. He was then perfectly normal until four weeks old, and he began to spit up his food. The vomiting was not severe, altho quite persistent after every feeding. The child did not lose weight, but became very restless and nervous, and received an unusual amount of handling. No gastric peristalsis was seen and no tumor could be felt in the abdomen. Weighing before and after nursing revealed that he was getting much more milk than he should get and the mother's milk proved by examination to be very rich in fat.

As a rule we do not believe in a complete examination of the mother's milk, because if the mother has milk, the baby must have it, but we do believe in estimating the quantity of fat in the milk, as an excess of fat is sometimes the sole cause of the disturbance. This can be very well done by the physician in his own laboratory, by the use of the Holt lactometer. Dilution of the mother's milk by giving water or cereal water before nursing, cutting down the nursing time to eight or ten minutes, caused almost immediate relief. In the event that more persistent vomiting had occurred, atropin sulphate would have been given immediately before each nursing. Most cases of vomiting will respond to one drop of this solution, added to the water which is given before the breast. Atropin sulphate, one grain to two ounces of water, gives a dose of one-thousandth of a grain to each drop. It is best to change this solution every month.

If the vomiting had still continued after forty-eight hours of atropin, and the weight had markedly decreased, the baby would have been given thick cereal feeding, according to the Sauer method. The cereal, usually farina, is added in the proportion of 10 per cent to the baby's normal formula. The mixture is boiled for one hour in a double boiler until it is thick. It is fed with a spoon, or thru a nipple with a large hole. If vomiting and loss of weight persist for three days after the cereal feeding has been used, surgery is usually necessary to effect a cure.

We have used thick cereal a great deal with such splendid results that we are almost inclined to believe every artificially fed baby would do much better on this method of feeding than on any other formula of artificial food. Babies fed on thick cereal never have colic, always grow very rapidly and are extremely comfortable, happy babies. We have never seen any carbohydrate disturbance in any of these cases.

Weighing the baby before and after nursing seems like an extremely difficult task, until one is supplied with the proper equipment. Mead Johnson & Company, manufacturers of dextri-maltose, have made it possible for every physician's office in the country to be supplied with a good dependable scale at a very low price. The physician must be made to feel the importance of knowing how much milk the baby is getting and how much he is gaining from day to day. There is no other way than by use of the scales to obtain these facts, and no one can have any excuse for not being able to obtain this information. The spring scales with the side dial are of litle value in this work.

This hypothetical baby now developed colic. An eminent eastern physician says "colic seems to be one of the penalties for being a baby," but often this penalty can be nearly suspended. Colic is usually due to overfeeding and is real indigestion. It is often magnified by too much attention, and annoying the baby in trying to give it some relief, thus introducing a big nervous element. By reduction in the amount of feeding, the use of atropin and thick cereal feeding, one can usually secure a peaceable baby. Enemas, drinks of warm water and nursing the baby in an upright position are helpful procedures.

After this attack, during which baby was carried and handled a great deal, he began to be very nervous and restless. The people complained that he could not sleep, did not eat, that the stools were bad, but that he was quiet when entertained. Physical and clinical examination revealed nothing wrong with this baby. He was being carried or rocked or entertained constantly. If he cried, the people felt that he must be picked up, but they did not know that his nervous system was thus sustaining a severe insult. This condition is mostly produced when elderly people are in the house, altho fathers and mothers are often to blame. People have a very strange idea about the proper attitude to exhibit toward a crying baby, and they feel that entertaining him or amusing him, or fussing with him, is the first curative method to use, when it really does nothing but magnify the baby's distress, or satisfy him in his protest against his environment.

Physicians as a rule are too cowardly to attack this problem in a bold manner. I think we make a lot of enemies by scolding people about handling and amusing their babies, but still we never miss an opportunity to stress the evident results of over-attention. We urge them to let the baby alone and let him cry. This is as important a line of treatment as we ever administer. We insist that the baby must be left alone, never to be touched except to be cleaned and fed. However, we do not make the mistake of informing the parents that the baby is spoiled. The so-called spoiled baby is just a nervous baby. Many more babies are started on the neurotic life by this careless handling in the first three months of infancy than from any other cause. People must learn that babies who get constant attention when they cry soon cry all the time, and that those who seldom get any attention, when they do cry, are those who seldom cry.

We have a large series of cases, of six to eight months old babies, who come to us still having their birth weight, and are physical wrecks. These children have been the victims of constant attention. We usually put them in the hospital, and often leave them on their former diet. In a few hours after crying it out, they become quiet, sleep better, are less nervous and start to grow. People resent this manner of treatment until they have gone thru it once and then they see the folly of their former procedure. It is sometimes very difficult even to get a chance to demonstrate your point.

Many mothers make hard work for themselves in breast feeding. It is not good sense to allow the baby to eat whenever he wants, neither is it fair to either mother or baby to let him eat constantly all night. Children during the first months should be fed every three hours, seven times a day, waking them for the six day feedings and one feeding at night. Smith, of New York, has demonstrated that the normal baby gets practically all there is in the breast in twelve minutes, consequently a three hours nursing of twelve to fifteen minutes each, if the breast is free and the baby is normal, is sufficient. Some physicians advocate nursing every four hours, but in our private practice it does not seem to work out well. The baby gets too hungry, and causes too much annoyance in the home.

Oftentimes the mother is told her milk is poisonous, and that the baby must be weaned. We really do not know what this term "poisonous' milk" means. The milk may not agree because it is too rich, or because it is too abundant, or because it is too scant, but it is not poisonous, and the baby must have what there is. If the milk is too poor, or too small in quantity, baby can have all there is, and then additional milk can be supplied. If the milk is too rich or overabundant, then the nursing can be cut down to the number of minutes that will supply the proper amount, and also the milk can be easily diluted by giving various water solutions before nursing. The milk and the baby can almost always be made to agree. Mothers complain that their menstruation causes great disturbance with the baby. It does, but this disturbance is not as great as an artificial feeding might cause for a few days. Consequently this disturbance must be endured.

This baby at first had a great deal of difficulty in getting the breast milk, and would not work on the hard, short mother's nipple. A pernicious habit is often established in hospitals and by nurses in giving the baby a rubber nipple to supply him with water during the first two days. It should be an absolute rule never to give any rubber nipple to the baby until he has become perfectly capable of nursing from the mother's nipple. Many times we have asked the mother to replace the rubber nipple by spoon feedings. Many physicians and nurses are inclined to take the baby from the breast, because of these fancied difficulties. Oftentimes the doctor wants to wean the baby because there is not enough milk, or because it is not of good quality, or because it is too rich, or because the baby is unable to get it from the nipple. Not one of these is a real valid excuse for weaning.

To keep the breast active, it must be nursed regularly and emptied thoroly each time. Oftentimes the mother is instructed to feed the baby alternately from the bottle and breast. This is the best way to produce an insufficient breast and to start the mother on a compulsory weaning process. Consequently, each breast should be nursed once thoroly every six hours, and if there is not enough mother's milk to satisfy the baby, then additional milk should be used. Breast milk will mix with any artificial food, and there is no danger in combining it with any formula. Sometimes one will have to feed the bottle before the breast, but the best scheme is to let the baby have all there is in the breast and then end the feeding on the bottle food. We are too prone to allow the baby to wean himself or encourage the mother to wean him.

This baby was weighed every week, and found to be gaining eight ounces consistently. We feel that the greatest criterion as to what a baby is doing is its weight. This baby at one time had very green stools, was vomiting, was crying a lot, and still he never failed to gain eight ounces a week. Nothing was done, because the baby was increasing in weight. In a few weeks milk and baby became compatible, the stools became better, the baby became more satisfied, and the increase in weight continued. If one had made some radical change in the food in order to produce a quieter baby or better stools or to stop the vomiting, undoubtedly the weight increase would have ceased.

The mother complained that her two months old baby was constipated meaning really that he did not have a movement by his own effort. Babies at this age are practically never constipated. The peristaltic action of the bowel is so great that the first part of the fecal matter is forced into a plug or a mass at the lower end of the bowel. This the baby is unable to expel by its own efforts. The part back of the mass is soft, well digested, is a perfectly normal stool. This, then, is not constipation, but a normal process, but the baby does not have the ability to expel it. Enemas or suppositories we believe do no harm, and do not cause paralysis of the bowel, as is suggested by some. Cathartics are pernicious things to use, when enemas or suppositories will relieve the condition. Sometimes mineral oil will cause some lubrication and the baby will be able to expel the mass, but babies as a rule are not constipated.

There is a tendency among us all to want to treat babies much as we would an adult, consequently medicines are used. We find it very seldom necessary to give drugs of any sort to the babies.

When this baby was two months old, he was given one teaspoonful of cod liver oil once a day, and a few teaspoonsful of orange juice. This is an absolute routine in all babies to prevent the deficiency diseases, such as scurvy and rickets.

A cow's milk formula of one-third milk, two-thirds water, sugar added to make seven per cent, is proper food for the newborn. The baby should have half milk and half water with a seven per cent sugar at two or three months, and two-thirds milk and one-third water with a seven per cent sugar at six months. Another safe guide is to give baby one and one-half ounces of milk to each pound of weight. This is then diluted and sweetened to make the proper amount for twenty-four hour feeding. This readily conforms to the formulae worked out by the investigators for percentages and caloric values. These formulae can be gradually graded from one to the other. This is simple, entails no higher mathematics, and still it conforms exactly to the end-result of higher mathematical formulae. The addition of sugar need not be complicated nor need it be an extra heavy expense. Cane sugar is borne better than we formerly supposed and blue label karo is easily digested and is not expensive. Dextri-maltose and milk sugar are valuable sugars.

In our infant feeding we do not use top milk, because we believe that it is milk and not the cream that should be modified. Lime water is of very little value, in the quantities usually given, but does no harm. Brenneman has demonstrated that the boiling of milk makes it more digestible, and this practice has become almost universal over the country. It does not necessarily cause constipation and if it does, this sort of constipation is easily relieved. A constipated baby does not have indigestion.

Infants do very well on buttermilk mixtures, but in some localities it is extremely difficult to get and very hard to make. Marriott has devised a simple and efficient substitute for buttermilk. He advocates the feeding of acidified whole milk as a routine in all sick and well infants. The formula from the start is whole milk and remains the same thruout the first year of life. To prepare the acidified milk a quart of milk is boiled five minutes and then cooled. After removing the scum, two teaspoonfuls of U. S. P. lactic acid are added drop by drop. In addition, about two ounces of blue label karo corn syrup is then gradually mixed in while slowly stirring.

After the baby has learned to nurse well from the breast, he should be early taught the use of the rubber nipple. If this habit is not taught by the second month, it is almost impossible to get babies to use the rubber nipple after that time.

At six months of age this baby was fed every four hours, five times a day only. At this time he was given broth, and at six and one-half months cereals, and at seven months vegetables; his milk was increased in strength to whole milk at nine months of age.

Weaning is not a difficult process and should be commenced about the ninth or tenth month. Textbooks say that babies have no difficulty with the teeth, but we see babies constantly that are disturbed by the advent of teeth. Slight reduction in the diet is a safe procedure at this time.

After going thru with these many difficulties our baby arrived at the age of one year, weighed about twenty-one and one-half pounds, had eight teeth, had no deficiency diseases, and was a well developed and natural baby in every respect. While some of these symptoms seemed distressing at the times, they are all very easily surmounted in most instances by persistence and a little *common sense in infant feeding.*

COMPLICATIONS FOLLOWING THE USE OF MERCUROCHROME-220 SOLUTIONS

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Inasmuch as solutions of mercurochrome-220 are being extensively used for various conditions, attention should be directed to the accidents and complications which occasionally result from its use. Death has resulted from its use intravenously, and stomatitis not infrequently results when the solution is given in this manner, or even when it is used in dilute solution for irrigation of cavities. To some patients it is irritating when injected into the bladder or urethra in solutions as weak as one-half per cent.

Occasionally it is used on patients who seem to have but slight tolerance for the mercury absorbed. Absorption varies with the strength of the solution and with the type of cavity in which it is used. Cavities which have poor drainage, and in which the solution is retained for long periods of time, are more likely to show the effects of mercury absorption. The stomatitis may be so mild as to almost escape detection, or it may be of severe degree.

The following case report is one of a severe stomatitis and acute nephritis following the use of mercurochrome-220 solution.

Mrs. A. L. 34 yrs. of age. She had had no previous illness of any consequence except an acute pelvic cellulitis some ten years previously. This may have been the origin of her present trouble. She had been ill for about two months from an infected ovarian cyst on the left side. The cyst had gradually increased in size until it almost filled the abdomen. She suffered from moderate sepsis. Her morning temperature was practically always normal, but the evening temperature varied from normal to 101 degrees. She had lost about twenty-five pounds in weight, but had no pain or complaint to make other than she tired easily, and the growth of the tumor troubled her.

At this time her urine was free from albumin and casts. She was operated on and the cyst drained of a large amount of greenish yellow pus. Direct smears of this pus showed many streptococci. As the cyst was densely adherent on all sides except anteriorily, it was deemed inadvisable to attempt its removal at that time on account of the large numbers of streptococci present. An attempt was made, however, to shell out the endothelial lining of the cyst. This was abandoned, when the cyst wall was punctured and the free peritoneal cavity endangered. The opening in the cyst wall was sutured to the parietal peritoneum and free drainage established.

The patient made an uneventful recovery from this procedure, but was left with a large draining sinus. Drainage was profuse and did not diminish from the use of various antiseptic irrigations. No trouble was experienced with any of the solutions until after mercurochrome-220 was used. This solution was injected three times weekly into the cyst cavity, one ounce of a five per cent solution of mercurochrome being used. The resulting discharge became stained a deep red color but did not diminish in amount. After three weeks use of this solution the patient began to complain of soreness in her gums and moderate salivation. The mercurochrome was immediately discontinued, but the stomatitis continued to grow worse. Her breath became extremely foul, the teeth loosened, and her mouth became so painful and tender that she could scarcely talk. She had some nausea and diarrhea which lasted several days. She developed some edema of the face and ankles, and the urine contained albumin and casts. This acute nephritis may have resulted from her sepsis, but was aggravated by her severe stomatitis. Her loss of weight was rapid during this attack. The drainage from the cyst continued profusely and continued to be stained a deep red color for over two weeks after the use of mercurochrome had been discontinued.

The patient gradually recovered from the stomatitis, and in a month her mouth was practically well. Her nephritis persisted, however, due no doubt to her continued sepsis. Her general condition did not improve and she was operated on again nine months after the drainage operation. The cyst was removed at this operation. Cultures and smears taken from the pus showed no organisms, the latter being imbedded deeply in the cyst wall. Following the removal of the cyst, the patient developed an acute streptococcus septicemia and died on the fifth postoperative day. An autopsy showed the absence of a diffuse peritonitis, and the operative field appeared clean.

While mercurochrome-220 is a valuable germicide, and can ordinarily be safely used, the following precautions should be borne in mind:

1. It should not be used in deep and poorly drained cavities or sinuses continuously over a long

period of time. When indicated in such cases, it should be used at intervals.

2. When used intravenously, it should be given only under urgent circumstances and only then with caution.

3. Strong solutions should not be used until after weaker strengths have first been tried out.

4. Stomatitis may result from the use of weak solutions, one per cent solutions having produced it.

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FLOW OF STRUCTURE IN RELATION TO AGE AND DISEASE*

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I

As we look around in this room, and observe each other, perhaps most striking is the fact that almost immediately we notice, or form an estimate of every one's age. This man looks as we say about 30, another about 50, another still between 60 and 70, and so on. This estimate is based on certain external appearances, and it is not one but their sum total which generally gives us a pretty reliable impression of a man's age. It strikes us as curious that a man of 20 should be white-haired or bald. Why should this be so? The casual observer might possibly be satisfied with the external evidence, but a more thorough investigator would immediately ask what these external characteristics depend upon and why they generally occur in more or less orderly sequence and combination.

The first question therefore is this: Are the obvious external evidences of age coupled with corresponding internal organic changes? In other words, are the external appearances of age only reflections of more profound internal changes in our bodies? Is there perhaps a fundamental biological principle of aging which finds an expression in all tissues and organs? What is its nature?

It has been appreciated for a long time that certain organic lesions, like hardening of the arteries, atrophy or diminution in size of the heart, the liver or the kidneys, and some others, are commonly bound up with old age. But these were regarded as simple quantitative losses which owe their origin to a decline in nutrition of tissues in advanced age. And thus it has also been known that individuals during the early formative and growing period of their life are more susceptible to certain diseases than during later age periods. It is an every day experience that children and youths are more susceptible to tuberculous infection, typhoid, osteomyelitis, measles, scarlet fever, and so forth than their elders. That this susceptibility stands in direct relation to certain structural characteristics of the youthful and growing bodies has been generally appreciated, and I need not spend time here to point out the relation which the anatomical construction of the growing bone has to staphylococcus infections, or the abundance of lymphoid tissue, particularly in the gut, to tuberculous and typhoid infections. But what I would like to insist upon and emphasize here is that important structural changes are not only represented in earlier growth periods of the individual, but throughout life and that they constitute a definite coherent cycle. Thus the whole process of aging is part and parcel of our individual evolution and it is bound up with definite qualitative structural changes in practically all the important organs of the body. As these organs change in constitution, so do their correlative functions and consequently the whole organization and appearance of the body. A man's apparent age is therefore the external reflection—of an inner picture—of the sum total of all those temporary organic states which characterize a given period.

While these architectural reconstructions are never abruptly performed, they proceed persistently in orderly sequence until at the end of the cycle every organ differs in essential points from the original. It follows therefore that it is not possible to establish at any time during a person's existence—as the older authors in anatomy and histology attempted to do—a normal standard of construction in any organ. This, like the average man, does not exist. I think I can do no better than to illustrate this point by a flagrant concrete example. For this purpose I will commence for convenience sake, with a more prominent second point, that is architectural reconstruction.

When, for example, we speak of the heart, we should bear in mind that even this simple muscular organ is never an absolutely fixed and permanently finished entity, but rather a constantly evoluting, cardiac unit, which passes through well defined structural age period changes, and whose functions and predisposition to disease are correspondingly altered. Nothing illustrates these changes better than the variations in the circulatory tree, which are characteristic for the various age periods. Its reconstruction therefore gives us perhaps the best visual conception of the qualitative changes in organ reconstruction in relation to function and disease. While time will not permit me to give a detailed account of similar changes in other important organs, such as for example, the liver, it nevertheless holds true for them also.

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*Read before the Third Annual Meeting of the Pacific Northwest Medical Association, Vancouver, B. C., June 26-28, 1924.

(Here were shown lantern slides of the heart, drawing particular attention to (1) the preponderance of circulation on the left side and gradual loss on the right, (2) increasing tortuosity of vessels, (3) the development of septal anastomoses, (4) the development of an increased vascular supply in the adipose tissue around the heart, particularly in the auriculo-ventricular sulcus and its anastomoses with the coronary circulation.)

The structural changes which we have so far considered are of the more prominent, grosser type, but these changes in construction constitute only one phase and are made possible by the constant finer movements of cell contents and cell arrangements in all organs. These latter are, therefore, of fundamental importance in the flow of structure.

This morphological flow which constantly involves cells and the cell arrangements, expresses itself in a continuous regression, collapse and loss of cells and is coupled with a corresponding reformation. All of our parenchymatous organs are thus in constant motion and cell degeneration, cell atrophy collapse and loss are normally found, as well as new cell formation and new cell arrangement. These, under normal conditions, proceed in coordinated sequence, so that a proper balance between loss and reformation is preserved. This important phenomenon has only recently been fully appreciated in its significance and bearing. It demonstrates in the first place, the great lability of structure and the possibility of variations which still come within physiological limits, and in the second place, the ease with which this balance may be upset and exaggerated along one or the other line. It is extremely interesting to note that this flow of cell substance proceeds with unequal rapidity in different organs. Of all organs those of internal secretion are most fluid, in constant, often quite diffuse, regression and progression, so that in them it is almost impossible to find an instance in which they can be declared absolutely normal. As a matter of fact, much that was formerly regarded as evidence of disease in them, we may now still regard as coming within physiological variations. What is applicable in this respect to the organs of internal secretion, is applicable also to some other organs or tissue systems, as for example, those of the haematopoietic system, principally spleen and bone marrow. The researches of Drs. Gross and Waugh have here established marked age period changes, and within them an extreme fluidity of structure. Take the spleen: In early life this, with its numerous epithelial buds, abundant capillary system, and loose arrangement of lymphoid elements, resembles granulation tissue. Moreover, in its great vascularity, it has a structure admirably suited for intermingling of passing blood and pulp. Notable is that during this period, the cellular reaction of the spleen to infections is not strong. With progressive age the spleen shows diminution in its lymphoid tissue, thickened blood vessels and a greater predominance of pulp, which gradually collapses. Its stroma increases. In this period the spleen reacts strongest by exudation and proliferation to any outside agent. In old age finally the spleen has undergone such marked regression that its reaction and participation in disease are only very sluggish and uncertain. In other words, the adaptability of the spleen to environmental influences is, on account of its organization, greater when young. Its reactions however are greatest in middle age. Very similar observations apply to the bone marrow.

I shall at another occasion, speak of this flow of substance with regard to the pancreas, and the relation it plays there to the whole life and to disease of the organ.

To summarize here, we may say that an absolutely normal standardized type of organs does not exist. On the contrary they are in constant state of flux. This flux shows itself on the one hand, in constant modifications in cell type, and cell constituents, on the other hand, in reconstruction of the architecture of organs in various age periods. Functions of an organ and dispositions to disease vary accordingly.

II

If the normal flow of cells and structure is of great importance, it acquires an equally great significance and role under pathological conditions, more particularly in those inflammatory lesions which are clinically chronic and anatomically characterized by interstitial, fibrous growth, with loss of parenchyma. Take for example, the typical so-called primary or genuine contracted kidney. Everybody knows that it is characterized by a progressive slow waste of glomeruli and tubules, and an abundant increase in fibrous connective tissue. Thus the kidney becomes much reduced in size and weight, and granular on the surface. That briefly is the essential tissue change, but in order to appreciate its functional importance, we must proceed to construe the plans of this pathological organ, for it is not the cell and tissue changes alone which hold the key for the understanding of function, but the plan of their arrangement. Here again the arrangement of the circulatory tree is fundamental.

Until recently the prevailing idea of the normal kidney circulation was that divisions of the renal artery formed into arcuate arteries at the junction of medulla and cortex and that from these arcuate arteries, straight vessels proceeded to medulla and cortex. This conception still figures in many text-books, and is, as the researches of Gross have shown, quite erroneous, and the renal circulation, instead, resolves itself into an abundant dichotomous division of arteries. That is, the main renal artery divides rapidly into branches. These maintaining almost to the last a uniform diameter, all proceed to the cortex. Here they abruptly divide into numerous branches perpendicular to the capsule. At right angles with these small glomerular branches are given off.

In the contracted kidney, almost the whole of the normal cortical circulation is eliminated by the inflammatory, new tissue formation. The remaining blood vessels become narrow, tortuous and course without regard to the remaining parenchyma. The bulk of the circulation is transferred and readjusted to the medulla, which is not involved in the cicatricial contraction. Thus in a well pronounced case, the medulla constitutes nearly four-fifths of the renal substance. This readjustment is carried out not only by dilation of vessels and pooling of the blood into the pyramids, but by blood vessels which can not in the normal kidney be detected. In addition appears an abundant compensatory circulation in the pelvic fat which extends to and communicates with the vessels in the medulla. Thus a complete qualitative reconstruction of the circulation has been established.

Associated with this circulatory rearrangement is reformation in the tubular parts. These are shortened, partly widened, partly narrowed, distorted in course, and no longer accompanied by a normal blood stream. Moreover, the epithelium of the convoluted tubules regresses from a highly secretory type to that of a low, endothelial membranous lining. This can much less readily secrete the complex nitrogenous molecules, but probably acts simply as a transuding lining. If the cortex is thus completely altered and perverted in its normal construction and secretory activity, the medulla on the other hand now carries instead the bulk of the blood supply in an apparently new and enlarged network, which supplies the remaining loops for compensatory and possibly new functions.

In other words, we have here the anatomical foundation for renal insufficiency and perversity which functionally express themselves in inability of normal nitrogen excretion and the uremic state.

The conclusions which we may draw from this hasty review of a difficult, but important subject are: First, the intimate relations between functions and structure. Secondly, that a knowledge of structure in health and disease is absolutely essential for a thorough understanding of function. A purely functional pathology without objective anatomical basis is nonsense or unreliable. Thirdly and most important, our body is never a fixed and finished organism, but a flowing ever changing unit. Upon this flow depend the phenomena of aging, the functional changes incident to age and finally and most important the predispositions to, and expressions of, diseases.

ACUTE POLIOMYELITIS

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At the present writing there have been some 90 cases of acute poliomyelitis reported to the Seattle Health Commissioner since the first of last August. In other cities and regions of the state the disease has been epidemic. As it is a disease of warm weather the probability of its speedy disappearance is good.

There are many difficulties in diagnosis, the chief one being our inexperience with the disease. Until a doctor has once had a well marked case of poliomyelitis with paralysis he is not likely to recognize it in its early stages. The many and variable types of the infection, and the occurrence of abortive attacks without paralysis, are also confusing. The abortive cases are probably more common than the typical ones. In the present outbreak there has been a considerable proportion of cases with brain involvement simulating epidemic encephalitis. These are classed as cerebral, cerebellar, meningitic, brain stem, bulbar, and extensive meningo-encephalo- poliomyelitis. Cases with facial, trigeminal and ocular paralyses were not uncommon.

While death was rapid in some patients, with involvement of the brain, yet many others with milder cerebral infections made a rapid and complete recovery. Thus the writer saw a boy and girl in different parts of Seattle with nearly similar symptoms beginning with nausea, headache and slight fever, and within 3 days difficulty in swallowing and speech developed. Fluid was regurgitated through the nose and the voice was notably altered. There was some paresis of the upper arm in one of these patients. These bulbar symptoms all subsided after 2 weeks or so without any special treatment whatever. Paralyses of the cranial nerves, as of the facial and trigeminus, appear to have a favorable prognosis, and those seen in the recent epidemic have all recovered after a week or more. Indeed many authorities regard such as of peripheral origin, as in the instance of facial palsy, because it is unilateral and of temporary duration.

Until there is some more exact diagnostic test for acute poliomyelitis the diagnosis of many cases must remain in doubt, especially at the early stage when treatment is most effective. In fact the entire success of serum treatment depends upon its use in the beginning of the infection before definite lesions have occurred in the nervous tissues.

Therefore it follows that early recognition of acute poliomyelitis is imperative.

It has seemed to the writer that physicians err more often in slighting the early symptoms of infantile paralysis than in letting their imaginations run riot and seeing the infection in every form of infantile disorder. The first fault is mainly due to lack of familiarity with the disease, and especially to deficient medical training, while the latter depends upon an uncontrolled imagination and a desire for theatric pecuniary effects.

Early symptoms include headache, nausea or vomiting, fever, rapid pulse, stiffness of the neck and back (seen in attempting to bend forward while sitting), a positive Kernig's sign, pain in the extremities and muscular twitching. Rigidity of the neck is the most common suggestive sign. Latterly paralysis has occurred three to five days after the prodromal symptoms but in the past epidemics the paralysis has often been simultaneous with the onset of the disease. Diarrhea has not been frequent but rather constipation. There has been little evidence of contact infection; only in three instances were 2 cases reported in the same house in the Seattle outbreak. In the writer's experience the age of patients ranged from infancy to the late twenties.

While lumbar puncture is undoubtedly the most valuable single diagnostic test in poliomyelitis yet at times it may be difficult to obtain in mild suspicious cases, and the serum should be urged imperatively in these, even though lumbar puncture is refused. In some patients with infantile paralysis the spinal fluid consists of pure blood, as in encephalitis. This may indicate ventricular hemorrhage but patients often recover notwithstanding this finding. The cell count is of course unreliable whether the blood in the spinal fluid is of pathological or accidental origin. In a very general way the maximum cell count in encephalitis (30 to 40) is the minimum in acute poliomyelitis. In encephalitis perhaps half the cases show increased cell count in the spinal fluid, and occasionally the count runs above the hundred mark. In acute poliomyelitis the cell count runs more often from 30 to 70, and a count above 100 is thought to indicate a greater severity of infection. In abortive cases of poliomyelitis with fever the cell count may be normal. Lumbar puncture is not only invaluable in differential diagnosis between epidemic encephalitis, acute poliomyelitis and meningitis but is, next to specific serum, the most valuable treatment.

These three diseases must always be kept in mind in making a differential diagnosis in a patient with acute infection and brain symptoms.

The presence of a positive Wassermann reaction in the spinal fluid does not rule out either infantile or encephalitic infection because, in the few instances in which this has been found in our experience, the acute incidence with fever and the subsequent course of the disease have spoken for the more acute infections.

To distinguish between the encephalitic type of acute poliomyelitis and epidemic encephalitis is sometimes impossible. By encephalitic type is meant those cases of poliomyelitis which present the same symptoms of involvement of various parts of the brain or meninges and cranial nerves as occur in encephalitis. But here the seasonal incidence is of great diagnostic import. Bassoe, in reference to bulbar paralysis in the young, made the statement that if it appeared in summer it was probably due to poliomyelitis, whereas in the winter it was due to epidemic encephalitis, and when occurring in spring or fall he threw up his hands and was noncommital.

Furthermore, the initial symptoms in acute poliomyelitis are more often digestive, while in encephalitis a history of cold or grip is more common. Then infantile paralysis is much more frequent in infancy and youth than epidemic encephalitis, as the name suggests. And finally a high cell count in the spinal fluid is rarely seen in encephalitis.

The incidence of epidemic encephalitis in cold weather and following a grip-like cold is borne out by the striking experiments of Rosenow in which the etiologic organisms of influenza and encephalitis are identical in that innoculation of them into animals may produce encephalitis or pneumonia, according to the site of their introduction.

As the earliest symptoms of poliomyelitis are chiefly meningeal (stiffness of the neck) in character the question of meningitis always arises. In doubtful cases the finding of specific organisms in the spinal fluid will decide the diagnosis, especially in the meningococcus and tuberculous forms.

Stress has been laid upon diagnosis because successful treatment depends wholly on early recognition of any infection where an immune serum is indicated. This brings us to the question of what constitutes the best treatment of acute poliomyelitis and epidemic encephalitis. The East as a whole, and more particularly the Rockefeller group, are opposed to Rosenow, his etiologic organisms, and therefore specific treatment with hyperimmune horse serum.

Recently Amoss in Tice's Practice has attacked Rosenow's pleomorphic streptococci as the etiologic organisms of acute poliomyelitis by quoting Bull that none of these streptococci is capable of producing experimental poliomyelitis. Still more recently in the Clinic Bulletin (Sept. 23, 1894) Rosenow is reported as reproducing in rabbits with remarkable verisimilitude the various types of human poliomyelitis from cultures of pleomorphic streptococci taken from the nasopharynx of patients.

Any medical man who has seen the almost miraculous reproduction in the rabbit of various types of encephalitic infection—coma, hiccup, spasmodic torticollis and respiratory arrhythmias—by Rosenow with cultures of his green-producing streptococcus cannot fail to be deeply impressed with the marvelous mimicry of these human disorders in every detail.

The only conceivable flaw in these demonstrations of the reproduction of encephalitis and acute poliomyelitis lies in the remote possibility that unknown and unseen ultramicroscopic organisms are carried along in the repeatedly transplanted cultures. But in view of these remarkable experimental reproductions of disease in animals it seems hardly fair to say that the pleomorphic streptococci of Rosenow "are obviously secondary invaders, since they may be recovered from the central nervous system of persons who have succumbed to other diseases." (Amoss)

To look at the subject in a more practical way. In the matter of treatment what hope have we without the serum of Rosenow in epidemic encephalitis and acute poliomyelitis? It is true there is the human serum from recovered poliomyelitis patients. This is not a hyperimmune serum, as that produced by repeated innoculation of horses, but must be comparatively hypoimmune. It is impossible for general use so limited is its supply and, as in the case of serum from recovered influenza pneumonia patients, its curative action is very questionable (Peabody).

The determination of the value of Rosenow's serum is a most difficult problem and requires the comparison of hundreds of treated patients with untreated controls. Never before has the antipoliomyelitis serum been more satisfactory than this year. In a late number of the Clinic Bulletin (ibid) 9 patients were reported as having been treated by the serum with complete recovery of all, without paralysis, except in one case where an insufficient dose was given.

A few of the difficulties in establishing the therapeutic value of specific treatment will be brought to mind when one considers the surprising recoveries in untreated patients, the varying degrees of virulence and mortality in different epidemics, the variations in strains of streptococci in different localities, and the curative effect of lumbar puncture used more often in the patients who receive scientific care and therefore the benefit of early diagnosis and serum.

While a normal skepticism is the saving grace of scientific research, yet it would seem that the effete medical East is still a little too incredulous of the once wooly but now nascent West, in the case of Rosenow and his work.

The writer feels strongly that Rosenow's serum deserves the widest possible use in epidemic encephalitis and acute poliomyelitis as offering the only hope we have in these dire disorders. Also because of his brilliant, original experimental researches, with their marvelous reproductions of the human infections in animals, and because of personal and successful use of the serums in both diseases. The serums have been freely and generously offered without any restriction to a skeptical profession, and with no desire of reward, except the truth and that of relieving sickness and death. No man has so advanced medicine in the last decade as Rosenow by his demonstrations of the hitherto undreamed and far reaching effects of focal infections in the causation of so many common diseases.

TREATMENT OF THE CONVALESCENT OR INTERMEDIATE PERIOD OF ACUTE POLIOMYELITIS*

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In view of the recent but expected recrudescence of acute poliomyelitis in the Northwest, it will be timely to again review the treatment of this crippling disease.

The purpose of this paper is to again emphasize the importance of proper treatment and to condemn the evils of over-treatment of the intermediate stage of acute poliomyelitis. This intermediate stage or stage of convalescence begins with the disappearance of the acute symptoms of this infection and continues over a period of months to years until there is no longer evidence of any further muscle improvement.

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*Read before the Seattle Orthopedic Society.

The treatment of this stage is as important as the treatment of any stage of acute poliomyelitis for it is in this period that deformities may be prevented and the semi-paralyzed muscles be so treated that they recover much of their normal strength. It is also the most difficult and trying stage to treat as it is during this time that the parents and relatives become very restless and are usually not over satisfied with the care that the child receives. They become very impatient and demand that more radical measures be instituted in order that their child may recover more quickly and it is during this period that the doctor will lose the case unless he considers the psychology of the parents.

The reason why so many cases of acute poliomyelitis drift into the hands of quacks is because these fakers actually do something. The "laying on of hands" satisfies the relatives temporarily and it is not until too late that the parents realize that this treatment at the hands of the irregulars has been the most vicious and harmful. And chiropractic treatments have not eventuated in the cures that were guaranteed, but only in crippling contractures and deformities, while if the patient had remained under the care of a trained medical mind these deformities would never have occurred. Keep interested in the case and keep the patient away from the irregulars.

Do not infer from the above that I am advocating overzealous treatment, as it has been repeatedly shown that too much treatment is more harmful than too little; but the practitioner should never lose interest nor neglect these patients.

Treatment: For the purpose of treatment the intermediate period of the disease can be divided into two stages.

(1) The first stage, or that of muscle tenderness, immediately follows the acute symptoms and lasts for weeks to months until all muscle tenderness is gone.

(2) The second stage, or the muscle recovery stage, begins with the disappearance of muscle tenderness and ends when there is no further improvement in the strength of the weakened muscles. This may last for months, or even one or two years.

1. The treatment of this first stage is chiefly that of:

a. Absolute rest
b. Prevention of deformities
c. Avoidance of over-stretching the muscles.

a. *Absolute rest* means keeping the child flat in bed. But if only one limb is affected and the child refuses to keep quiet, then this limb should be so immobilized that it cannot be moved. To facilitate keeping children quiet as long as possible, I have found that if they are put on a well padded wooden or Bradford frame and then carefully lifted on this frame on to a small boy's wagon, they can be moved about the house and into the direct sunlight without any damage. The wheel chair is better but is usually prohibitive in price, but these wagons which are commonly rubber-tired, are relatively inexpensive. During this period of rest the patient should not be encouraged to even attempt to move these weakened muscles and the patient should be handled very tenderly, and especially so when they are given their baths.

b. *Prevention of deformities* should be started very early, as in this treatment we accomplish two other important points; that is, the avoidance of over-stretching the muscles and fatiguing the muscles. In the early stages the posterior molded plaster shell has been found most efficacious and in the more generalized type it should include the head and feet and if the patient becomes very restless, he can be tied into this shell by means of wide flannel bandages and also can be moved very easily from the bed to the wagon, or to the other rooms. If only one limb is afflicted, then a shorter plaster cast, a posterior molded splint, or a wooden, or wire splint can be used, but if any of these removable splints are used, they should be watched most carefully as the tendency of these splints is to slip down, especially at the ankle, which will permit the foot to drop. Braces are very useful, particularly in the later stages, or in the cases where only one or two limbs are affected. Whatever appliances are used, they should be kept on continuously both day and night.

The most common deformities are foot drop, flexion of the knee, flexion of the hip, adduction of the shoulder, and scoliosis. So it is usually best to keep the foot at right angles, the knee straight, and the hip straight, while the arm should be kept in a position of 90° abduction, with the elbow at 90° flexion and the wrist straight.

c. *Stretching of the muscles.* The treatment of over-stretching of the afflicted muscles has been covered under the previous heading of Prevention of Deformities. Since the muscles cannot be over-stretched if the splints are put on early and in the right position, it is best to start immediately with the applications of all devices that will prevent this over-stretching of any and all of the affected muscles.

2. *Treatment of the second or muscle recovery stage* is more energetic now that the tenderness in the muscles has disappeared and treatment includes

(a) Prevention of Deformities
(b) Avoidance of Fatigue
(c) Thermotherapy
(d) Massage
(e) Muscle Training.

(a) *Prevention of deformities* should be continued as rigorously as before. However in this stage, braces and corsets can be used more freely but these appliances should be inspected frequently and kept in good repair, as one should ever be mindful of the evils of contractures and deformities.

(b) *Fatigue*: It is during this stage that over-emphasis should be placed on fatiguing the muscles. As Lovett has proven, the cases should be constantly watched so as not to over-exercise these weakened muscles. This applies especially to the weight bearing muscles. In the cases in which the weight bearing muscles have been weakened, they should be constantly guarded against over-exercising for a period of at least the first year.

This prevention of fatigue is probably the hardest part of the treatment to accomplish as the cases are usually young and hard to control while there is a universal opinion among parents that if a little exercise is good, more is better, so they permit their children to over-do. So with this in mind, the value of having a doctor in close touch with the case can well be realized. Children who have a general paralysis chiefly affecting the lower extremities, should be watched closely so that they do not use their crutches too much and thereby over-fatigue the shoulder muscles.

(c) *Thermo-therapy*: Thermo-therapy, more especially that of direct sunlight or of the quartz-mercury lamp is beneficial not only locally, but generally to the patient. These patients are in need of this type of radiation as they are somewhat anemic both from their previous infection and their prolonged rest in bed. The heat from an ordinary electric thermal globe, when applied to the afflicted extremities will aid in the circulation and this in turn will benefit the muscles. This form of therapy also has a satisfying effect upon the parents which should not be overlooked. The application of thermo-therapy treatments gives the practitioner an opportunity of observing the case at frequent intervals. At this time, we might mention that electric stimuli, such as faradic or galvanic currents, are still occasionally used, but with doubtful results. Another form of heat therapy which the patient enjoys is an immersion into a warm tub of supersaturated solution of salt water. If the paralysis is general, the patient may be lowered into bath on a rubber mattress, or else by means of a sheet, and while in the bath, the patient can be massaged, and at times the younger children can be playfully made to go through their exercises, as here in the tub they consider it fun to kick a rubber ball with their toes.

(d) *Massage*: Massage should not be instituted until the tenderness has all disappeared after which time it is of much value. The massage should be very light at first and gradually increased, but never should approach the rough kneading type of massage and, whenever possible, the massage should be given by the doctor himself, or by an experienced physiotherapist.

(e) *Muscle Training*: Many apparently completely paralyzed muscle groups can be so trained by conscientious effort that they become remarkably strong again. Muscle training gives results, but not in a short period of time. It takes an unlimited amount of patience and effort to achieve success. But here again it is the first essential to find out just which groups of muscles are affected, and to what degree they are weakened. The weakened muscles, only, should be exercised, and not the strong or normal muscles. Often in younger children, it is quite difficult to get them to even make the attempt to contract the weak group of muscles, but this can be accomplished by ingenious methods such as inveigling the child to throw a rubber ball with her weak arm when her well arm is tied behind her. The doctors are usually too busy and impatient to do this and the mothers are usually too sympathetic, so trained physiotherapists get the best results; but if one is not obtainable, someone like an interested aunt can be taught to give these treatments. The doctor should check up on the operator frequently so as to see that the proper exercises are continued. Special attention should be directed towards all cases of abdominal or spinal muscle paralysis. If these muscle training exercises are properly selected and faithfully continued, the result will be very satisfactory and everyone will feel well repaid. And if the doctor institutes and supervises this training it gives him additional contact with the patient whereby he keeps the patient under his care, and the family has no desire to seek relief from the irregulars.

SUMMARY

1. As soon as the general toxemia and fever have disappeared, treatment should be immediately directed towards the prevention of contractures and deformities.

2. During the tender stage absolute rest should be insisted upon and all over-zealous treatments avoided.

3. Prevent all over-stretching of muscles and muscle fatigue.

4. Proper muscle training continued diligently over a long period of time gives the best results.

5. All these cases of paralysis need the doctor's care more in the intermediate period than in the acute stage. If the doctor will only keep interested in these cases throughout all periods of the paralysis he will not only keep the cases out of the clutches of quacks, but will achieve remarkable results.

THE RELATION OF PROLONGED COAGULATION-TIME TO HEMORRHAGE FROM TONSILLECTOMY*

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An interne in a standardized hospital said to me recently, "I would be afraid to do a tonsil operation on anyone with a coagulation time longer than 6 minutes." This paper attempts briefly to discuss the subject of hemorrhage from tonsillectomy in patients apparently normal with especial reference to prolonged coagulation time.

We therefore exclude from consideration in this paper cases with prolonged coagulation time due to general pathological conditions such as anemia, leukemia, purpura-hemorrhagica, jaundice, acute yellow atrophy of liver, necrosis of liver, phosphorus or chloroform poisoning, yellow fever, or miliary tuberculosis. The author believes also that operations should not be done immediately before or during a patient's menstrual period. He also stands opposed to tonsillectomy upon acutely inflamed throats whether due to tonsillitis or peritonsillitis.

The standardization of hospitals within the past five years has brought into routine use the taking of blood coagulation time on cases scheduled for operation.

It was my lot, however, to serve in the Ear, Nose and Throat divisions of four hospitals before the taking of coagulation time came into practice (Cleveland City Hospital, Associate Staff Member, 6 months service 1916-17; Base Hospital, U. S. Explosions Camp "C" in charge of Ear, Nose and Throat Division, 6 months service 1917-18; Seattle Emergency Hospital, in charge Ear, Nose and Throat Division; 9 months service 1919; King County Hospital, in charge Ear, Nose and Throat Division, 4 years service beginning January 1, 1920).

In these institutions with regular days for tonsillectomy we did from three to twelve cases per week averaging five or six cases weekly. Besides these hospital cases, I did a large number of tonsillectomies in private practice without coagulation time being taken.

The significant fact is that none of these patients in hospital service or private practice died of hemorrhage and in very few did we have any difficulty whatever from bleeding.

When we began taking coagulation time in the King County Hospital (January 1, 1922) I decided that unless there were other special contraindications, providing the blood would clot, we would do the tonsillectomy and see if we could note any direct relation between prolonged coagulation time and hemorrhage from tonsillectomy either at time of operation or afterward.

Coagulation time was determined by the capillary tube method. The lobule of the ear is pierced with a small lance so that free bleeding occurs. The first drop is wiped away and the second drop is allowed to flow into a capillary glass tube about 3 inches long. This is broken at the end of 4 minutes and each minute thereafter. Coagulation is easily determined by the presence of a stringy clot.

This method is open to objection, especially with hemophiliacs, in that the coagulation time is shorter than with blood withdrawn directly from a vein. This is due to the blood coming in contact with the cut tissue surface in the puncture wound of the ear. It seems to be, however, a satisfactory clinical method and is quite commonly used by hospitals and laboratories.

The operation used in nearly all cases was a semiblunt dissection, using a modified Robertson's knife, and finally severing the pedicle with a snare. The means for controlling bleeding when necessary, was a suture of No. 1 plain catgut placed in the tonsillar bed so as to include the bleeding vessels. In many cases it was necessary to place 2 or 3

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KING COUNTY HOSPITAL, SEATTLE, WASHINGTON.

Coagulation Time on Tonsillectomy Cases 1922 and 1923.

Coagulation Time	Age of Patient in Years															
	5 and under	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 over
4 min. or under	3	2	3	2	2	1	—	1	1	—	1	—	—	—	—	4
5 min. or under	15	22	19	17	8	11	8	7	10	4	6	1	1	—	1	—
6 min. or under	7	5	6	8	6	6	9	6	3	1	2	3	2	1	—	3
7 min. or under	4	4	11	11	5	11	11	8	6	3	5	—	1	—	2	3
8 min. or under	7	5	11	8	6	12	3	5	2	1	2	1	1	—	—	1
9 min. or under	1	3	5	1	3	1	3	1	5	1	1	—	1	—	—	1
10 min. or under	1	—	3	3	—	—	—	1	2	1	—	—	—	—	1	—
11 min. or under	1	—	—	—	1	—	—	2	1	—	—	—	—	—	—	—
12 min. or under	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
13 min. or under	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14 min. or under	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
15 min. or under	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
No. of cases according to age	40	41	58	51	31	43	35	33	30	11	17	5	6	1	4	12

Total number of cases 418.

Average coagulation time for entire group 6.5 minutes.

	Number of Patients According to Age.	Percentage of Total Number	Average Clotting Time.
5 years and under	40	9.5%	6.4 min.
6 years and under	41	9.9	5.9
7 years and under	58	13.9	6.6
8 years and under	51	12.2	6.5
9 years and under	31	7.4	6.6
10 years and under	43	10.3	6.4
11 years and under	35	8.4	6.7
12 years and under	33	7.9	7.0
13 years and under	30	7.2	6.8
14 years and under	11	2.6	6.7
15 years and under	17	4.0	6.2
16 years and under	5	1.2	6.2
17 years and under	6	1.4	6.8
18 years and under	1	0.2	6.8
19 years and under	4	0.9	7.2
20 years and over	12	7.9	6.0

sutures in one tonsillar fossa before the bleeding was controlled. In 5 cases where bleeding was profuse and sutures difficult to place, the pillars were sutured over an anchored gauze sponge which was removed the following day.

I desire here to express my appreciation to Mrs. C. M. Griffith whose kind assistance enabled me to secure the record of these cases.

Of the 418 cases 65 have coagulation time of 8 minutes, 29 of 9 minutes, 12 of 10 minutes, 5 of 11 minutes, 1 of 12 minutes, 2 of 14 minutes, and 1 of 15 minutes. Thus there are 115 cases with coagulation time of 8 minutes or longer and 21 cases of 10 minutes or longer. These cases show no special distribution as to age.

These patients, as before noted, were submitted to the usual tonsil and adenoid operation without previous medication or treatment. Out of the total of 418 patients, 16 had profuse bleeding at time of operation. Fourteen of these had a coagulation time of 7 minutes or under, one had coagulation time of 8 minutes and one of 10 minutes. In 11 cases it was necessary for the patient to be seen by the hospital interne for post-tonsillectomy bleeding. Ten of these patients had a coagulation time of 7 minutes or under and one of 9 minutes. No patient was in serious condition from hemorrhage.

DISCUSSION

In this series of 418 patients, largely children and apparently not inflicted with general disease, it would seem that prolonged coagulation time up to 15 minutes bears no relation to hemorrhage from tonsillectomy.

It might well be asked, why is hemorrhage from tonsillectomy more frequent than from other operations? Tonsillectomy is numerically the most common operation of the present day. It opens up highly vascular tissue. The nature of the surgical field is such that it is not advisable to suture together the raw surfaces as is done after most operative procedures. There seems to be in the minds of some surgeons the erroneous belief that children never bleed after tonsillectomy, or at least that divine Providence always stops the bleeding. Thus the little patient leaves the operating room bleeding and continues to bleed. Retching, vomiting or coughing in the early post-operative period may start new bleeding. The raw surface within the throat always becomes infected and vessels may be opened up by sloughing.

What is the practical value of knowing coagulation time before tonsillectomy? If the coagulation time is high, say above 8 minutes, a complete history and examination should be obtained to rule out any of the general diseases, including hemophilia, which could cause this increased coagulation time. If no such general disease is found, and one so desires, the coagulation time can usually be shortened by giving calcium salts internally or by hypodermic injection of some of the newer aids to coagulation.

Now a word about hemophilia. As you know, this disease or diathesis is extremely rare. There are but two diagnostic factors in hemophilia: (1) History, (2) Prolonged clotting and bleeding time. Therefore, I urge that we pay especial attention to history of excessive bleeding. Suppose a child is brought in with the following history: When quite young a small cut on arm or leg bled for many hours before it could be stopped. A tooth socket following extraction bled for several days and required repeated packing by the dentist. The mother has noted that a slight bruise leads usually to a large black and blue spot. The coagulation time by the capillary tube method is say 6 minutes.

My advice on such a case is not to do any operation whatever except as a means of saving life for with such a history the patient is probably a bleeder regardless of the clotting time as determined by blood obtained from ear lobule or finger. In such a case bleeding time should be noted and coagulation time determined upon blood obtained directly from a vein. Even if these be normal, a patient with history such as outlined above must be regarded as a grave surgical risk.

CONCLUSIONS

1. In this series of 418 patients it would seem that prolonged coagulation time up to 15 minutes bears no relation to hemorrhage from tonsillectomy.

2. If coagulation time is high—above 7 minutes by capillary tube method—a complete history and physical examination should be done to rule out diseases which might cause this, namely: hemophilia, anemia, leukemia, purpura-hemorrhagica, diseases of the liver, phosphorus or chloroform poisoning, yellow fever or miliary tuberculosis.

3. Hemophilia has only two diagnostic points: (1) History, (2) Prolonged coagulation and bleeding time. It is the author's firm belief that with a history of excessive subcutaneous hemorrhages and prolonged bleeding from cut surfaces, no operation of any kind should be performed except as a life saving measure.

4. During tonsillectomy hemostasis should be obtained as in any other operation.

709 Cobb Bldg.

SOME OBSERVATIONS ON THREE HUNDRED CASES OF BLOOD TRANSFUSION*

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Owing to the limited time alloted to each paper, I will not attempt to go into the historical phase of the subject of transfusion, nor will I give you a compilation of the literature, but will rather present my own findings in some three hundred cases extending over a period of fourteen years.

I will take up the subject with the following outline in mind:

1. Indications.
    - (a) anemia following hemorrhage.
    - (b) sepsis.
    - (c) postoperative shock.
    - (d) preliminary to operation.
    - (e) purpuras.
    - (f) pernicious anemia.
2. Selection of a donor.
3. Choice of method.
4. Technic.

The indication par excellence for transfusion is secondary anemia, particularly the form following hemorrhage, and in this group of cases hemorrhage from various sources is noted. For example: 1. one retinal hemorrhage from a patient with high blood pressure where all other measures had been tried without avail, 250 c.c. of blood being drained off and 500 c.c. of blood given with cessation of hemorrhage and complete restoration of the eye at this point. 2. Several cases of postoperative tonsillar hemorrhage, where suture of the pillars, various hemostatics, including intravenous normal saline having failed, cleared up after transfusion and went on to recovery. 3. Hemorrhage following the extraction of teeth. 4. A number of gastric hemorrhages due to ulcers and new growths, both benign and malignant. 5. Duodenal ulcerations. 6. One case of hemangioma of the intestines, which had been diagnosed as duodenal ulcer, in which two transfusions were done, one while the patient was in extremis and another preliminary to a resection of the intestine, with a brilliant result. 7. Several cases of uterine hemorrhage due to fibroids, essential hemorrhage, placenta praevia, and retained placenta. 8. Several cases of hemorrhage following ruptured ectopic pregnancy are also included.

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In sepsis, while the results are not always so brilliant, transfusion is of proven value. One case of double mastoid with blood stream infection, running a seeming septic course, yielded perfectly to a single transfusion; another case of infection of the arm and hand with exsanguinating secondary hemorrhage recovered with a transfusion of 1000 c.c. of blood, and the sloughing granulation tissue fairly sprouted under the stimulative and curative action of the transfusion.

In post operative shock, even in the absence of hemorrhage, it has been found a salutary measure as it has likewise preliminary to operation.

In purpura hemorrhagica it has proven to be a sustaining measure although the final results are variable.

In pernicious anemia as you all know it is a purely palliative measure and given solely in the hope of favoring a remission.

DONOR—The donor should be a healthy adult, with a negative Wassermann, properly grouped, and cross agglutinated to be doubly safe.

CHOICE OF METHOD—I have used all the various methods known, from the suture method of Carrel, the Crile cannula, Elsberg's modification of the same, the syringe canvula system, Citrate method, to the Kimpton-Brown tube. In the last 150 cases I have used the Kimpton-Brown tube method, with but fixe exceptions where I used the Lindeman method. The Crile cannula principle I gave up though physiologic, because it is tedious, and the inability to measure the amount of blood flowing across. The citrate method I discarded because of the serious reactions following, one of my cases proving fatal, though the blood was properly grouped, rechecked and the citrate chemically tested, nevertheless at the end of forty-eight hours the patient developed a hemolytic jaundice, hemoglobinuria, passed into coma and died, due undoubtedly to the addition of the citrate to the blood.

TECHNIC—In grouping the blood I always use a reliable laboratory but in some cases of extreme emergency where such is not available I resort to a short rapid method known as Vincent's modification of the Moss grouping. I have on hand two known sera, Groups 2 and 3. A drop of each is placed at either end of a glass slide and a drop of the blood to be tested is added and thoroughly mixed, within the course of a few seconds agglutination if present can be readily seen with the naked eye. If agglutination occurs in Group 2, the blood comes in Group 3, if present in 3 the blood comes in Group 2, if in both it comes in Group 1, and if not present in either it comes in Group 4 (Group 1 Jansky).

The technic of the Kimpton-Brown method, as I use it, is as follows: The vein selected in the arms of the donor and recipient are exposed under 1 per cent novocaine, a ligature is tied on the proximal end of the donor and the distal end of the recipient. A Crile clamp is placed opposite the ligature and the veins nicked. A blood pressure apparatus about the arm of the donor is held at 60 to 80 mm. The clamp is removed, the cannula end of the tube is inserted and if the blood does not rise promptly negative pressure is produced in the tube by means of a Potaine aspirator. The tube when filled is transferred to the vein of the recipient and positive pressure is gently exerted by means of a light compression rubber bulb. The nick in the vein is tied with fine catgut ligature, the vein therefore remaining patent. The Kimpton-Brown tubes may be purchased at any Hospital Supply house and are sterilized and coated under aseptic conditions with a thin coating of paraffine.

In conclusion I will say that the most perfect results from transfusion are obtained in anemia secondary to hemorrhage from whatever source. In infections it is always worthy of consideration, where it should be used early with drainage, and oft repeated if necessary; preliminary to operation and in post operative shock it is of distinct value. In purpura hemorrhagica transfusion yields variable results and in pernicious anemia it is purely palliative. With regard to the choice of method, by all means whole blood should be used, and in this group of cases I have found the Kimpton-Brown tube most successful.

GOITER PREVENTION AS APPLIED TO WASHINGTON*

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Of recent years there has been a great deal of investigation concerning the cause of simple goiter. This is of particular interest to us, since there are two great districts in this country in which goiter is epidemic. This is the region of the Great Lakes and of the Pacific Northwest.

In our own state, the goiter incidence is very high, some authorities give it the highest of any state in the Union. Most of the credit for this work is due to the Ohio investigators, Marine, Lenhart and Kimball. Their research work demonstrated that when the iodine content of the thyroid falls below approximately three-fourths of a grain, goiter develops.

Shortly after their research work was concluded, there came an interesting chance to try out their theories. Pennsylvania State hatcheries were about to give up the raising of trout because of the goiter incidence among the young fish. Hearing of the Ohio men's work, they sent for them, thinking there was something they could do. Marine readily stopped the incidence of goiter among the young fish by adding a small amount of iodine to the water. Following this, the American Medical Association made a small grant to allow them to carry their work forward. The goiter prevention work was first tried in the schools of Akron, Ohio, during the year 1916. Here the plan adopted was the giving of a small amount of sodium iodide to the children during one month in the Spring and one in the Fall. About this same time Klinger, in Switzerland, tried out the goiter prevention work on a much more extensive scale. The plan used in Switzerland was the giving of a small amount of an organic iodine in a palatable chocolate confection, once a week, through out the school term. In four years' time, the results were so striking, the goiter incidence in one district dropped from 85 to 13 per cent.

In Ohio during this same period there were no cases of goiter developing in the normal children that were taking the prevention treatment. While in the untreated children, during the same period of time, from 20 to 25 per cent developed goiter.

These same results were obtained in the treatment of fishes and of animals in the goiterous districts.

There are two periods of life in which to apply goiter prevention. The first period is that of intrauterine life; if the mother is given small doses of iodine during pregnancy the mother will not develop goiter and the child is assured of a normal thyroid at birth. This particular phase can be safely left in the hands of individual physicians, who can and should adopt this as a part of the uteral routine care.

Most goiters develop between the ages of eight and sixteen. Therefore the second period of goiter prevention should start about the age of six and continue through the age of sixteen. This will assure a normal thyroid in later life.

Now, as to the method of goiter prevention, several plans have been tried. In Michigan they are using table salt to which has been added a certain quantity of sodium iodide. The objections to this plan are, first, the dosage of iodine is not under control; there is no check on results, and lastly, there is some possibility of doing harm with this method, since it might aggravate certain types of goiter among the adults of the community.

The same objection holds to the method proposed in some localities, that of adding iodine to the water supply. The safest and best plan seems to be the one in use in several cities in the Great Lakes district and in extensive use in Switzerland. This consists in the giving in the schools of a palatable confection containing 5 or 10 mgms. of an organic iodine, once a week throughout the school term. Over a quarter of a million school children have taken this form of preventive. Absolutely no ill effects have been noted and there has been a noteworthy drop in the goiter incidence. During the spring of 1923, the Yakima County Medical Society brought this plan to the attention of the school board. We are fortunate enough to have a wide-awake board and a very progressive and active health officer, Dr. H. H. Smith. With their cooperation we secured a goiter census of Yakima County and City schools.

In the city schools, of 4,140 children, 36.6 per cent showed goiter. In the county, of 4,800 children, 46 per cent showed goiter. We adopted the plan of giving one tablet a week throughout the school term.

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Each pupil at the beginning of the school year is given a card to take home, upon this, besides the necessary data for a permanent case record, is a clause asking the parent's consent to the treatment and their willingness to pay, at a cost of 50 cents per year per child. In no case are the tablets given without the consent of the parent or guardian. These tablets are dispensed by the school nurse or teacher and through the health officer. This same plan is being carried out in some other counties of this state but not in all.

Our own health league has been very active in doing publicity work along this line. The state has been broadcasted with pamphlets, and many speeches have been made under the direction of the league. Considerable public interest has been aroused, not only in our own state but in the neighboring states of Idaho and Oregon.

Once the people understand that this is a prevention and not treatment measure, it is not difficult to secure their cooperation.

Goiter prevention has been endorsed by our government, public health bureau, and in some form will be adopted soon in many of the goiterous districts.

We should adopt this plan and make it statewide. It would seem that the best way to do this would be through the various county societies. They should make their census and through their health officer superintend the administration of the iodine. In no other way can the mass of the children be reached. In no other way can the results be checked, and surely it is our province to lead and superintend any public health measure.

Kimball says: "Goiter is the easiest known disease to prevent." I see no reason to stress before this body the mental and physical disabilities incident to goiter and there is no apparent reason why we should allow the present incidence of goiter to continue in this state. We have a cheap, easy, and safe method of preventing it. Why not use it?

QUACKS AND QUACKERY

G. A. Fuson, M.D.

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A brief survey by the most casual observer of the so-called field of medicine will disclose a state of affairs which is both disconcerting and deplorable, and which physicians may do well to enquire into. Such a survey takes cognizance of medicine only in its application for the alleviation of disease as compared with other schools of healing. Any scientific facts regarding the origin and course of human ills are lost sight of amid the spectacular display of so-called "cures" which the exponents of the various systems of therapy emphasize as proof of their prowess.

In no other science, profession or calling, save that of the clergy perhaps, is there anything like the variance of opinions regarding their merits as that held toward the profession of medicine or what may be called the healing art. It can also be said with equal truth that, in all these fields of endeavor, there is no question of more vital importance to humanity than that which engages the attention of the physician. The attitude of the public toward the question of health and disease is what the many teachers and preachers and healers have made it. Much of the good, thus accomplished, has been overshadowed by the fierce rivalry, often approaching the proportions of a combat, that has existed among the followers of the various cults, while society continues to seek that much desired but elusive cure for its ills.

There are a great many systems of healing already in vogue and more being born almost daily, yet all of them can support their claims for recognition by pointing to one or more cases which have regained health while under their particular treatment. Naturally, the system employed, no matter what it may be, gets credit for the "cure" and gathers to itself followers who in turn become advocates to pass the word along. Thus the faith-healer cures by faith, the christian scientist by divine good, the osteopath by alignment of joints, the chiropractor by readjustments and the physician by powders and pills. Evidently all of these conflicting claims for cures can not be based upon truth, yet the fact remains that many disease conditions, identical in their course and character, appear to yield as promptly and satisfactorily to the therapy of any one as to that of the others. As an illustration of this fact, patients ill with pneumonia, for example, frequently recover whether treated by christian science, osteopathy, a regular physician or by the application of an onion poultice.

In all this the casual observer finds such an array of conflicting evidence that, should he become the victim of some malady, he must follow the urgings of his friends or grope blindly in his search for means by which his health may be restored. And in any case, the quest often leads thru the entire gamut of healers, including the quack and the patent medicine man, to end in failure, as did Ponce de Leon's famous voyage to find the fountain of youth and for much the same reason.

This is the situation that confronts society and the medical profession today, and is a chief factor in retarding the progress of scientific medicine. Simply to deny the virtues of the various claims made for "cures" or brand their advocates as imposters, is but to cast a boomerang that returns to puncture the cuticle of the physician himself. He is told that his criticisms are born of jealousy and envy and, to prove the contention, a few cases in point are forcibly called to his attention. He is thus accused of being actuated by selfish motives, and his well-meant efforts to protect society are worse than useless.

To undertake to correct the evil by legislation is equally disastrous. Here the element of personal liberty becomes involved. As in religion, so in questions of health and disease, the public generally are averse to the idea of compulsion or dictation. Each individual feels himself fully qualified to decide into whose keeping he shall place his physical as well as his spiritual well-being, and any attempted interference therewith is looked upon as not only meddlesome but vicious.

To whom or to what shall the responsibility for this state of affairs be charged? Possibly the factors involved are numerous enough, but of those most outstanding in their influence there are two that merit almost equal honors for first place. Of these the folk-lore tales of miraculous cures by means of exorcism, charms and amulets is one, and the other is the physician himself.

Medicine and religion are coexistent, the former being once the hand-maid of the latter. Belief in evil spirits was one time universal, and sickness but evidence of one or more of these spirits sent by the gods to punish the offender against some imaginary being. Naturally the therapy of those days consisted in appeasing the wrath of the god or gods thus angered. To accomplish this, the priests, or those on familiar terms with the gods, were implored to interpose in behalf of the sufferer. Thus came into vogue prayers, exorcism, charms and amulets.

The stories of cures effected by these means became a part of the folk-lore of the race, which finds expression in more or less modified form even in our day. As proof, mention need only be made of the wearing of asafetida about the neck to ward off some malady, carrying buckeyes and potatoes for rheumatism and the prayers voiced for the sick and distressed. Even to the pills and powders and other remedies used by the present-day physician there still cling some of the old husks of this ancient folk-lore. The use of the placebo, one of the last surviving relics of superstitious days in medicine, is but a veiled acknowledgement of the efficacy of charms and amulets. There can be no doubt that these legends have had a marked influence in fixing in the minds of our people the idea that disease is an entity and that some outside, powerful force or agency, operating independently of the body forces, is necessary for its removal.

This conception of the cause and proper management of disease, erroneous as it is, is one of the leading factors in keeping the so-called field of medicine fertile with possibilities for the fake healers and designing quacks. Our christian science friends and other irregular practitioners owe much of their success as such and possibly their very existence to this same false idea. The founders of these cults, having discovered the discrepancy that exists between the theory and practice of medicine wherein the remedies fell far short of the claims made for them, but still clinging to a faith in the old cures, began to cast about them for other and more dependable methods by which to wage war against disease.

In this state of mind Mrs. Eddy saw the effects of a certain law, not yet understood, which has to do with a favorable influence of the mind over the body in sickness as well as in health, hedged it about with a theory more or less plausible, and called it science. The founder of chiropractic medicine, viewing the question from a like standpoint, began a series of investigations that culminated in the school of that name. In much the same way other cults have come into existence, some finding a sphere of usefulness, while others manifest no semblance of merit whatever. But the idea that some force or agent, operating independently of the body is essential for the cure of disease, has given birth to them all. And the fact that so many disorders are self-limited, that is, recover of themselves, is responsible for the continued existence of these same cults. These latter are the cures, to which they point to prove their theory and therapy sound.

Medicine is not an exact science. There are few if any laws that are universal in their application to disease. The same therapeutic measures that give speedy and satisfactory results today may fail utterly in a similar case tomorrow. This is attributed to personal characteristics, such as idiosyncracy, individuality or temperament, but the explanation falls far short of being clear. Furthermore, as has been pointed out, many of these diseases are self-limited and are not materially influenced by therapy of any kind. Among these may be mentioned pneumonia, measles, typhoid, smallpox, etc. To be sure, there are a great many things to be done that will lessen the suffering and add to the comfort of a patient thus afflicted, but there is no known remedy at hand that can be considered a cure, or that will materially cut short the disease. Despite this fact, however, the majority of such cases recover.

It is not too much to say that these facts are admitted by all thoughtful physicians of experience who soon recognize and learn to rely upon the natural forces thus manifestly inherent within the human body. But this discovery, so important and far-reaching in its effects, has not always been fairly and squarely explained to the public. Doctors have not taken the people sufficiently into their confidence in this regard. Instead, the tendency on the part of physicians is and always has been to assume credit for recoveries, for which they were in no way responsible, and thus leave in their wake the false notion that it was their skill in selecting and applying remedies that restored the patient to health. This little deception, innocent as it may appear and practiced for personal gain, is on a parity with that of the charlatan and quack, and fosters a credulity on which the many sects and cults in medicine live and thrive. If this is not true, let some old father in medicine speak up; if it is true, the medical profession should take a thought for that old admonition about removing the mote from a brother's eye, and have a few beams extracted from its own optics.

However, among all this strife and discordant clamor, now going on in the so-called field of curative medicine, there is an element of science, a blessing to humanity and a hope for the future of medicine. This science is based on the operation of laws that function in the form of forces inherent within the human body, and finds its clearest expression in that branch of therapy known as immunity. Together with a proper control of contact, thru which diseases are so often transmitted, it is the foundation upon which preventive medicine, both present and future, must depend for success and in typhoid fever and diphtheria has given a glimpse of a future rich in possibilities.

Hodges Building.

CURES, CULTS, FADS AND QUACKS*

WALTER H. STEPHAN, M. D.
DILLON, MONT.

THE HISTORY OF CURES AND HEALING FADS

Throughout the history of mankind there have been many and varied healing fads, cults, and so-called cures. The ailments of humanity have been cured by nearly every substance on earth, or under the earth, or from the heavens above. The pages of history give record of cures that were wrought by all manner of persuasion: metaphysical, religious, superstitious, psychological, scientific, and above all pseudo-scientific.

For several centuries moss scraped from the skull of a hanged man, and the roots of plants gathered in the dark of the moon were thought to be efficacious in relieving ailments. Even today, according to testimonials, drug-like substances are doing wonders. "Mothers' Friend" and "Peruna" are good for some half dozen diseases and have cured thousands. In fact the wealth of some of our best families was started by a good remedy compounded somewhere in their family trees.

At various times there have been people who were endowed with such wonderful magnetic power that by stroking the sick they were able to impart vitality to the suffering and to cure them. Therefore people came to them, had faith in them, and were made happy and well. Is it surprising that these magnetisers believed themselves especially blessed by Providence?

During more recent years there have been many of these healers, who, I am afraid, were not so honest or so deluded as their predecessors. Uncle Henry in Collier's Weekly tells how they used to cure scores of people and create much sensation in the rural districts. "The doctor I remember best," he says, "was Professor Hieronyimus. He had side-burns longer'n my mother's lace curtains, and could cure anything from birthmarks to baldness, no ailment barred. Vital healin' he called it. No knife, no medicine, no nothin', jus' the plain application of his hands over the affected part. Why, Barney, magnetism poured out of him like sap out of a sugar maple. For two dollars he'd take plain tissue paper between his palms an' vitalize it, an' all you had to do to keep well was jes' to pin it on your nightshirt at the back over the great nerve center of the human body."

In the second half of the nineteenth century the country was carried away with the blue glass craze. People would sit under blue glass for hours at a time, confident that they could feel health gradually creeping over them. Under this treatment even life long disabilities and paralysis of the muscles passed away as by magic.

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*Read before the Forty-sixth Annual Meeting of Montana State Medical Association, Helena, Mont., July 9-10, 1924.

The reign of Dowieism has been recent enough that many of us have heard of this colossal healing fad. Alexander Dowie was a master at "touching" people, in more ways than one. He admitted that he cured two hundred thousand people whom their physicians could not relieve. He not only cured some believers of their ills but also helped them so much that they placed all their earthly possessions in his hands. He even claimed to be Elijah returned to earth. Yet Dowieism has now passed into the discard.

So many and so varied have been the cures throughout the history of mankind that it is of no particular value to mention more than the above outstanding ones, for no matter how varied their nature they all display an underlying uniformity in cause and effect.

THE SECRET OF CURES

To the serious student of humanity the main point of interest is that, although these cures did cure at one time, they are now laughed at and have been relegated to the scrap heap of cures that have failed. Then the logical conclusion is that, if they do not cure when people cease to believe in them, they must have been efficacious only through belief or mental effect. It is evident, therefore, that mental therapy, although not generally recognized as such, has existed since the dawn of historical man and was the first of the healing arts. Not realizing that any substance or method under the sun, accompanied by a powerful suggestion of its healing value, would give results in some cases, people naturally gave credit to the substance or method used rather than to the mental suggestion. The physician of today understands the power of mental suggestion, but does he always appreciate its value in his own practice?

THE INTERDEPENDENCE OF MIND AND BODY

As there is no doubt that the human mind has a profound influence on the physical body, is it surprising that man has commercialized this fact? Many of these mental effects are apparent even to the laity. Every one experiences physical disabilities during grief and emotional crises. Through fear, anxiety, and foreboding, the mind can produce such a disturbance in the normal bodily functions as to simulate even organic diseases. There is no doubt that a man who thinks he is sick may become sick. The old saying, "As a man thinketh so is he," can be accepted here as true. Physicians have long been aware that mental suggestion, whether coming from within or without, has a marked effect on the functions of all the organs.

Let us consider the phenomenon of fear as our physiologists now explain it. Mark the chemical and functional changes in the organs.

"A visual picture or a sound is registered on the brain; it is a picture or a sound which past experience has taught us is dangerous. Note what happens. Automatically an impulse is instantly telegraphed by a sympathetic nerve to the adrenal glands, which at once secrete an excess of adrenalin into the general circulation of the body. It is an infinitesimal amount, but with what an effect! The blood, the precious fluid that is everything, must be sent to the firing line, the brain and muscles. The blood is drafted from the non-essential industries, from the skin, hence the blanching, from the digestive organs, which temporarily stop all work—from the liver and spleen, great chemical factories in normal times, but now of no moment. At the same time the liver pours its stored up glycogen into the blood system, increasing its sugar content by about one third, because the combustion of sugar greatly speeds up the energy of the muscle cells. The blood pressure is raised, the pupils dilate, and all previous fatigue of mind and body, if present, drops away." This is the dramatic way in which Dr. Berman, biochemist at Columbia University, shows what may happen from the mental impression of fear.

If fear creates such chemical and functional disturbances, do we wonder that its first cousins, anxiety and worry, also bring disorder? Indeed, anxious solicitude concerning some harmless ailment may develop even serious complications, in no way related to the original complaint. The following case illustrates this point. A year ago a high school girl and her mother called at my office. The girl had a very marked acne vulgaris. The mother complained that the girl was a nervous wreck and did not eat or sleep well. After about fifteen fractional doses of X-ray therapy to her face, the acne had nearly disappeared, and the girl became a different person. Her general health became perfect with the removal of the cause for her solicitude, namely her unsightly face, for it was then possible for the natural recuperative forces to restore health.

As all physicians know these things, I recount them only for the sake of emphasis. It certainly is time for the physicians to appreciate that humanity is so constituted that more than half of all its ills are of such nature that they will not be cured until some impressive motive from either religion or science, real or supposed in either case, is brought to bear on the minds of many patients, to change the mental attitude towards themselves and their ills.

Dr. Walsh of New York, comparing poor human nature when ailing to a drowning man, who grasps at a straw, says, "The amusing thing is that his mind so often converts the straw into a solid beam of hope, on which he floats into the harbor of good health, when he thought he was seriously ill."

WHAT THE PUBLIC SHOULD KNOW CONCERNING CURES

It is time for the public to know that the so-called cures alone have never relieved mankind of the real organic diseases, in which there is real tissue destruction too great for the body to overcome unassisted by science. Brights disease, diabetes, heart disease, and the infectious and contagious diseases are not within the sphere of their curative power. True, the cures have at times been helpful in relieving the concomitant symptoms and in making even the patients suffering from organic disease feel ever so much better for the time, but the underlying physical disorder has continued to progress. Thus the testimonial of cure and the death notice of a person have been known to run hand in hand in the public press.

Think of the toll of human life small-pox and typhoid would continue to take if humanity were dependent upon the cults and quacks for its sole protection. Faith healing cults do not give the public pure water nor save diabetic or pus-appendix patients from the grave. The fact that they have helped in certain mentally induced disorders is not proof that they are omnipotent and a cure-all for every ailment of mankind. The deplorable result is that many a poor victim is lured into a fool's paradise, whereas had his case been taken in time, science might have helped him. Such a condition of affairs is certainly worthy of consideration and study.

Dr. Wm. Mayo termed the functional disorders "the smoke screen for cults and quacks." Under functional disorders are classified all the neuroses and psycho-neuroses. And as we study them, they seem more and more closely related to old fashioned hysteria, to use the term in a broad sense.

Today many of the leading psychologists are agreed that the hypnotic state is nothing but induced hysteria. Therefore, if we recall the infinite possibilities of delusion induced by the hypnotic state, we can neither wonder at nor deny the fact that hysteria can and does simulate any disease known to man. What an important part hysteria must have played with man's ills down through the ages! So closely are the two mental states related that professional hypnotic subjects often become major hysterics. And it is for this reason that hypnotism has lost its popularity.

It is not surprising, then, that the public is confused and does not appreciate the difference between functional and organic diseases. Only the highly trained diagnostician can know when he is dealing with real pathology or with a disturbed function of the organs. In the case of organic pathology the mental attitude at best has very little to do with the condition; in a functional disorder the mental attitude may be entirely to blame. Therefore, as long as cults and quacks refuse diagnostic training and use one method for the cure of all diseases, many human lives must be sacrificed on the altar of their fanaticism.

As a profession our motive is to help humanity. We, therefore, have no quarrel with the cults, cures, and fads when they help ailing humanity properly, or when they keep within their own spheres. A very great evil however, has arisen out of the half truths which these various methods employ, and it is for this reason that every honest physician should earnestly endeavor to set the public right in regard to them.

Through propaganda the public has been led to believe that the medical fraternity objects to cults and quacks because they harm the regular doctor's practice. Quack propaganda states that physicians fight them because they are afraid of their bread and butter. Sarcastically M. D.'s are referred to as, "the medical Trust." However, it will not escape the notice of the most casual observer that the best qualified physician, instead of being injured by competition from the ill-prepared doctor, is more likely to be enriched by having to repair the injuries that result from the mistakes following in the train of incompetents and quacks. Vaccination, sanitation, and the early diagnosis of disease tends to prevent sickness and thus lessens the physician's work. Negligence in proper treatment and in health measures increases sickness. Hence, if the medical profession were more interested in themselves than in the public's welfare, it would naturally boost quacks and cults and keep secret the preventive measures. Ultimately, it is the public, and not the physician, that suffers.

(To be continued)

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EDITORIAL

MERCUROCHROME

To sterilize an animal, without sterilizing away its animation, has long been the pursuit of latter day alchemists. While in two specific infections, syphilis and malaria, a considerable degree of success has been attained, the all-around, universal, safe and efficient sterilizer has yet to be captured.

Among the happy hunting grounds of those who chase this *ignis fatuus* no more favorite spot than Baltimore exists. There was, it is true, a long closed season after the failure of the silver nitrate intravenous injection for blood stream infections—the rara avis of that rarified atmosphere some 15 years ago. But in 1919, Phenix-like, Young rises up with Mercurochrome for local use. After Piper, of Philadelphia, in 1922 had given it rather unsuccessfully in puerperal streptococcus blood infections, Young and Hills reported a series of cases treated by intravenous injection of mercurochrome with most favorable results.

Latterly mercurochrome has been used in a great variety of infections intravenously with varying issues. No deaths have been attributed to it but the drug is not without toxic effects. At first 4 to 5 mg. of mercurochrome intravenously were given to 1 kg. of body weight. The lesser amount (4 mg.) is preferable as safer.

Mercurochrome is eliminated very rapidly, in usual doses, chiefly by the kidneys; in larger amount by the liver in bile, and by the intestines (Hench). It attains its maximum effect within 20 minutes after injection. Severe salivation has followed mercurochrome injection, and extensive sloughing thru infiltration of the tissues, as with salvarsan.

Also, like salvarsan, a transient albuminuria with some casts, due to probable mild nephrosis, is sometimes seen after the use of mercurochrome. But this effect does not militate against its use in acute urinary infections. Even in the presence of albumin and casts, with scarlatina and streptococcus infection, the intravenous injection of mercurochrome cleared the urine of bacteria within 24 hours (Young and Berkhaug). Only impairment of renal function, and high blood urea with urinary retention, contraindicate its use in renal infections.

At the Mayo Clinic mercurochrome has been given intravenously in 18 resistant acute cases of pyelonephritis with excellent results in 14. Twenty cc. of a 1 per cent solution of freshly prepared mercurochrome in sterile distilled water (allowed to stand 2 hours to sterilize itself) are given to the average-sized person intravenously. In 15 minutes to 2 hours practically all patients react more or less intensely with malaise, nausea, vomiting, chilliness or rigor and diarrhea (Morse).

This shock is accompanied by some acidosis and is akin to serum and foreign protein anaphylaxis. The intravenous injection of sodium bicarbonate relieves the toxic symptoms of mercurochrome, particularly salivation. Magrath, at Rochester, used mercurochrome in acute endocarditis. The blood stream was cleared of bacteria for a short time but the agent had no effect on the endocardial lesion.

We are faced with a certain dilemma in respect to the use of mercurochrome. On the one hand, owing to its partial toxic action, one would hesitate to give it in mild infections, but, on the other hand, in overwhelming septicemias where it is too often administered as a last resort, success is improbable. Whether this last Baltimorean progeny will fare better than its predecessor time alone will tell. Time trieth troth in every doubt (Chaucer).

K. W.

MUST OUR PRESIDENTS DIE IN OFFICE?

It is not inappropriate at this time of the presidential election to reflect upon the physical qualifications of presidents. The average age at inauguration of the thirty presidents from President Washington to President Coolidge is approximately fifty-nine; Washington was fifty-seven. The average age of the last ten presidents is fifty. Roosevelt was the youngest president in our history, taking office at forty-two, while Coolidge entered the presidency at fifty-one.

The oldest recipient of this high office was Harrison, who became president at sixty-eight, but only lived one month. Buchanan came next, being president at sixty-five. At the end of his only term he was still a year younger than La Follette will be when the next president is inaugurated in 1925.

Will a president ever be desirable who has reached the allotted span of three score and ten? The only example we have is that of Harrison and he survived office but one month. History then does not favor senility in presidents, nor does common sense.

The fate of our last two presidents should point a moral never to be forgotten. Both were afflicted with cardio-vascular disease and high blood pressure, and one is alleged on good medical authority to have had prostatic hypertrophy, and the other to have been suffering with chronic cholecystitis. Is it ever endurable that candidates for the presidency should be physically unfitted to carry on the office that has become notoriously more onerous with the passing years?

Indeed long before his presidency Wilson wrote that a candidate should possess the strength of a professional athlete. Probably no man in the world has more responsibility, more anxiety, more physical and mental strain to bear, than the President of the United States. But when to physical disability is added the natural disabling effect of senility in presidential candidates, the culmination of political asininity is reached.

Why do our great generals survive? Because all officers are required to keep fit by constant exercise, and because the unfit are eliminated by the frequent physical examinations necessary in the Army.

It is possible to conceive of a superman septuagenarian who might be the "grand old man" for the presidency. A man like Clemenceau who not only withstood the strain of the Great War, but of being shot into the bargain. Or President Eliot who is carrying on nobly at ninety. Both these men, however, would have passed the test about to be proposed.

For is it common sense to require an elaborate physical examination of a man, who is to lick stamps in a postoffice, and ignore the physical condition of a man who is to bear the colossal and unique burden of the whole United States on his shoulders. It is hard to believe that even the presidency of the United States offers a sufficiently alluring form of suicide to attract otherwise suitable but physically disabled candidates.

But suppose that a presidential candidate should make it known that he had successfully passed a physical examination by a recognized non-partizan board of medical men of high standing, or even an insurance examination of one of our great companies? Would not future candidates find it to their political and personal advantage to do likewise, and would not the test thus become a matter of custom?

Such national calamities as the fatal sickness of President Wilson, and the death of President Harding, should be avoided in the future—so far as a divine Providence permits. K. W.

TELEPHONE AMENITIES AND OTHERWISE

Physicians are usually faithful in responding to the call of the telephone, which, repeated often enough, to paraphrase, becomes "a call *to* the wild." Nothing is more aggravating than a succession of telephone calls, often inconsequential, when one is busy with patients. Rarely does one prepare to perform some simple operation, an injection of neosalvarsan, let us say, without having the proceeding interrupted by a call to the telephone. As one stands with the syringe poised in hand, the patient's arm bared, an assistant ready to apply the ligature, the ringing of the telephone constitutes an annoying interruption which, through long habit, is usually promptly answered, with results annoying alike to physician and patient. This is, however, a necessary part of practice to which we are accustomed and which we easily forgive. But the physician who has his office attendant get you on the phone and then keeps you waiting until it serves his convenience to answer is a pest. He is an egoist who exalts his own importance, and, consciously or otherwise, places himself on a pedestal above the need of exercising the amenities to which less important individuals are in the habit of submitting without question. The proceeding usually occurs about as follows.

Your telephone bell rings. Your office attendant answers, and is told that Dr. So-and-So wants to speak to you. You take the telephone and, in dulcet tones, the girl at the other end of the line says, "Dr. So-and-So wishes to speak to you. Will you please hold the phone," and you say, "Certainly." And you wait, and wait, and wait. You may be tempted to drop the telephone with an anathema suited to the case, and the importance or otherwise of the would-be conversationalist who is imposing on your time. But you are not sure of the immediate want. Perhaps he intends to invite you to dinner; possibly he has a patient for you; when finally he takes up the instrument he usually wants information as to the address of some other physician in another city or some similar errand of equal importance. Whatever the importance of the conversation, to the unfortunate who is detained while his lordly colleague completes the task *he* is engaged in, the proceeding is exasperating, and indicates lack of consideration and thoughtfulness on the part of the perpetrator.

If anyone is to be kept waiting at the telephone the one who calls should do it and not the one who receives the call. It might be well if physicians would bear in mind that good manners will be better served if they will allow their attendants to ring up others only after they themselves are ready to answer. Or better still, as soon as the other fellow's attendant has indicated that he is on hand, to take the telephone and themselves do whatever waiting is necessary.

W. H.

MEDICAL NOTES

WASHINGTON

New Wing for Hospital. Announcement has been made by the board of trustees of St. Luke's Hospital, Bellingham, of the plan to start construction, in the near future, of a north wing for the hospital at a probable cost of $65,000. The plans include arrangements for x-ray equipment, two operating rooms, and a large number of private rooms for patients. The members of the board of trustees of the hospital are: Dr. P. P. Lee, president; Dr. J. C. Harrison, vice president; W. E. Terrill, secretary; H. C. Heal, treasurer; Harry Gibb, J. L. Easton and Rev. Cannon Smith.

Headquarters to be in Tacoma. Headquarters for National Hospital Day in America and Canada, next May, will be the Tacoma General Hospital at Tacoma, according to word received in Tacoma recently from Buffalo, N. Y., and C. J. Cummings, manager of the hospital, has been appointed national chairman.

Dr. Charles E. Ferguson, formerly of Boise, Idaho, has located for practice at Spokane.

Dr. E. L. Ingersoll, of Spokane, has located at Ephrata.

Dr. R. S. Weyer of Ephrata has located for practice at Orting.

OREGON

Central Willamette Medical Society held its monthly meeting at Albany, Oct. 2. Physicians were in attendance from Lane, Lincoln and Linn Counties. Following a dinner at the Albany Hotel, several talks and papers were given.

Jackson County Medical Society held a meeting at Medford, Sept. 19. Dr. A. E. Rockey, of Portland, was the guest of the society, of which he is the first honorary president. Dr. Rockey gave the paper of the evening on the principal diagnostic symptoms of acute and chronic appendicits. Doctors were present from nearby cities.

New Clinical Amphitheater. The Portland Surgical Hospital has completed a Clinical Amphitheater where Dr. Robert C. Coffey and associates will hold surgical clinics on Tuesdays, Thursdays and Saturdays. The clinics will be open to all visiting doctors who desire to attend.

New Clinic Building. An up-to-date clinical building is under construction at Bend, which will be ready for use about Jan. 1. This building is expected to furnish Bend with facilities for medical and surgical attention not available at present. It is being erected for Drs. John Besson, J. F. Hosch and J. D. Donovan.

Following the resignation of two full-time members of the health service staff of the University of Oregon, the service has been organized this fall with Dr. William Kuykendall, pioneer Eugene physician, chief of staff; Dr. Gilson A. Ross, full-time assistant; Dr. D. C. Standard, part-time physician. Later in the college year a fourth member of the staff, who will serve part-time, will be appointed.

Dr. Susie V. Standard, formerly of Nampa, Idaho, has located for practice at Warrenton.

IDAHO

Dr. C. F. Magee, of Moscow, has completed arrangements for purchase of the Inland Empire Hospital and all equipment from Dr. W. H. Carithers, who has conducted the hospital for many years. Dr. Magee has plans for renovating the building and installing modern apparatus.

Dr. J. R. Numbers, Jr., who has been practicing at Meridian, has located at Boise, where he will be associated with his father, J. R. Numbers, Sr.

Dr. W. C. Lindsay, of Kellogg, has received his appointment from Governor Moore as a member of the state board of medical examiners.

OBITUARIES

Dr. Frederick S. Boston, who has practiced medicine in Seattle for the past six years, died unexpectedly Sept. 21, of pneumonia following an attack of influenza. He was born in 1892. He graduated from Meharry Medical College, Nashville, Tenn., in 1915 and from the Northwestern Medical School of Chicago in 1918.

Dr. Frank H. Campbell of Powers, Oregon, died at Portland, Sept. 25. He was born at Dallas, Jan. 12, 1895. He graduated from the University of Oregon in 1917, and from the University of Oregon Medical School in 1921. He came to Portland to visit his parents and was taken sick with Bright's disease, from which he never rallied.

Dr. Michael A. Flinn, aged 83, for some thirty-five or forty years prior to his retirement ten years ago one of Portland's prominent physicians, died September 28 at his home. Dr. Flinn was born in Ireland and came to this country with his parents when about five years of age, locating at Auburn, N. Y. With his family he later moved to Wisconsin and at the age of twenty went to California by way of Panama. For a time he worked in the mines in California, at Canyon City, Ore., and the Idaho fields. He was graduated from the Willamette University, Salem, in 1872, taking his degree of medicine.

Following his graduation he practiced for a time at Warm Springs Indian reservation and later at Vancouver, Wash., and Gervais before coming to Portland. He was among the first instructors of the University of Oregon medical school in Portland.

REPORTS OF SOCIETY MEETINGS

WASHINGTON STATE MEDICAL ASSOCIATION

MINUTES OF THE THIRTY-FIFTH ANNUAL MEETIN GOF WASHINGTON STATE MEDICAL ASSOCIATION, HELD AT BIG FOUR INN, BIG FOUR, WASH., AUG. 12-14, 1924.

MEETING OF BOARD OF TRUSTEES

The meeting of the Board of Trustees was called to order at 10:30 a. m., Wednesday. A quorum was found present, the following delegates answering to their names: W. F. West, C. H. Thomson, J. H. O'Shea, R. J. O'Shea, S. S. Oppenheimer, D. A. Nicholson, F. H. Brush, R. J. McCreery.

The communication from The Seattle Times was discussed and it was recommended that the following reply be read to the House of Delegates with the recommendation that it be sent to the representative of the Times:

The Board of Trustees regrets that because of its Constitution and By-Laws, it is unable to consider the proposition suggested by the representative of the Times. The Board of Trustees wishes at this time to express its appreciation of the many courtesies extended by the Times to the medical profession of this state, and for the generous use of its publication in promoting all health matters of interest to the general public of this state.

The amendments to the By-Laws of the Washington State Medical Association as presented by E. W. Young were read and discussed.

It was moved that the plan be rejected for the reason that the League had been organized to keep the Association out of politics, and by merging with it the primary object of the League would be destroyed. It would mean raising the dues, and, altho this would bring in more money for the League, it would lessen the membership of the Association for the reason that a good many doctors who now belong would drop out, due to the increase in dues, and that further, as this body was incorporated as a part of the A. M. A., it was doubtful that an additional qualification for membership would be legal. Also that the proposed amendments denied the Association any right to select or appoint the proposed manager.

After considerable discussion the meeting adjourned until 5:30 p. m.

A quorum being present, the meeting of the Board of Trustees was called to order at 5:30 p. m., the following delegates answering to their names: W. F. West, C. H. Thomson, A. E. Burns, S. Oppenheimer, R. J. O'Shea, F. H. Brush, D. A. Nicholson, J. H. O'Shea.

The unfinished business before the Board of Trustees was the proposed amendments to the By-Laws as offered by Dr. Young. It was unanimously voted to recommend to the House of Delegates to reject the proposed amendments.

HOUSE OF DELEGATES

Thursday, 9 a. m.

A quorum being present the meeting was called to order.

Goiter Prevention Committee

The following report of the Goiter Prevention Committee was read:

Resolved: That it is the sense of the meeting of the House of Delegates that the goiter prevention campaign be made a state-wide matter under the supervision of the medical profession, and with the cooperation of the Public Health League, and that the campaign can best be carried out thru the component societies. Also that the Public Health League take means to make such additions to the law that will enable the various medical directors to make such chemical additions to the food or water, the absence of which is the causative factor of goiter.

(Signed) E. S. West, *Chairman.*
B. T. King,
H. J. Whitacre,
D. C. Hall.

It was moved that the report of the committee be adopted. Seconded and carried.

Dr. C. J. Lynch read the following resolutions on the abolition of free clinics:

Resolved: That in our enthusiasm for the care and treatment of the dependent sick the physician should be equally careful not to produce a diseased condition of mind, whereby the recipient of our professional services is made an economic pauper. Our relations with our patients should be such that the honest, self-respecting and independent patient may retain those admirable qualities, even tho he can pay little or nothing for services rendered. Be it further

Resolved: That many of the public free clinics, as they have been carried on in many of the older communities, have tended to destroy the self-respect and independence of the recipients and, therefore, we are opposed to such free clinics in principle, where the above conception is not fulfilled. Be it further

Resolved: That it is the sense of this body that this can only be done by first encouraging those who can pay something to do so; and, second, for those who cannot pay anything, that fact should be kept a secret between the patient, the doctor, and those vitally concerned, the same delicacy and secrecy being observed that the doctor would wish if he himself were the recipient. Be it further

Resolved: That the members of the State Medical Association be requested to apply the same principles, namely, those of prevention and cure, as applied to sickness, to this problem of the dependent also, seeking the causes of same and by curing as far as possible those afflicted with economic pauperism.

It was moved that the resolutions be adopted. Seconded and carried.

The recommendations from the Board of Trustees to be sent to the representative of The Seattle Times, were then presented to the House of Delegates. It was moved that the letter be adopted. Seconded and carried.

The report of the Board of Trustees, unanimously rejecting the proposed amendments providing for merging with the Public Health League, and providing for a manager of the State Association was then read. It was moved that the report be adopted, seconded and carried.

The Oregon Plan

The report of the Committee to investigate the Oregon Plan was then read.

Your committee on the so-called Oregon plan begs leave to submit the following report and recommendations:

In making this report we have based it upon certain major premises.

1. It it recognized that the development of the Public Health League and its work has been one of the outstanding features of the work of the Washington State Medical Association. We believe from our investigations that not less than ninety-five per cent of the members of the State Association believe that the Public Health League is doing constructive service for the medical profession in the State of Washington. We do not think that this statement can be disputed.

2. We believe that, if there is to be a proper development of the activities of the Washington State Medical Association and of the Public Health League, it is imperative that there should be a just and equitable distribution of the burden, placing the responsibility for the financial support of these two organizations equally upon every member of the State Society.

The officers of the League report to this committee that about sixty per cent of the physicians in this State are now members of the League, paying in money more or less intermittently for its support; and that there are at least forty per cent of the members of the State society who pay nothing in support of league activities and yet benefit equally with those who bear the financial burden.

The expense of membership in the Public Health League at present is, as you know, $25.00 per annum, which is a purely voluntary contribution from the public-spirited men and women of this association. We believe it is self-evident that, if the entire membership of this association were members of the League, we could reduce the dues from $25.00 to $15.00 per annum.

We have investigated as impartially as possible the plan, adopted by Oregon about two years ago, of financing jointly their State society and the Public Health League, and feel that sufficient time has elapsed to demonstrate the feasibility of the plan, its advantages and disadvantages.

Briefly, the plan proposed to be adopted by Washington State is the raising of the dues of the State Association to $20.00 per annum, $3.00 of which shall go to the association, $2.00 to Northwest Medicine and $15.00 to the League; these dues to be collected as usual by the county societies; the League's portion to be remitted by the Treasurer of the State Association to the Treasurer of the League. This can be easily accomplished by the adoption of amendments submitted at the Wednesday morning session of the House of Delegates, with which you are already familiar.

We find that substantially the same plan was endorsed by Idaho at its last annual session, except that its joint dues were placed at $40.00, just double those collected by Oregon and now proposed for Washington.

Our investigations showed that, after the adoption by Oregon of this method of financing, the Society experienced some loss of membership. However, this proved to be but temporary and nearly all the old number of members is now claimed. We believe the loss was largely due to the fact that the Oregon League had been severely hampered by lack of funds for about two years; was without an executive secretary and had, therefore, been unable to accomplish much by way of publicity, public education or improved conditions.

We have considered the question as to whether there are constitutional limitations to the legal right of the State Association to divert moneys collected by and for the Washington State Medical Association to even so laudable a purpose as promoting the constructive services of the Public Health League, and believe that not only the functions of the legislative committee but the duties of the Committee on Publications, as set forth in subdivision D, Section 2, Article II of the Constitution, should be delegated to the Public Health League. This subdivision provided that the duty of this committee shall be to:

"Select and cause to have printed in the daily press articles of interest and general value to the public; to arrange and carry out series of public lectures and addresses on topics of public health, hygiene and general medical interest; and to use every effort to enlighten and direct public opinion in regard to broad problems of hygiene and the practical accomplishments and progress in scientific medicine."

We further believe that this proposal will develop a closer affiliation and working agreement between the Washington State Medical Association and the Public Health League, in that the amendments submitted provide that the retiring president of the Association, as well as the President and the Secretary-Treasurer, be members of the Board of Trustees of the League, and that they select a fourth, thus giving the Association a representation of four Trustees on the League Board; also, that the Executive Secretary of the League function as Field Director of the State Association, to aid in its organization and operate in any way deemed advisable.

It must be borne in mind that this plan in no wise interferes with the present mode of operation, or the activities of the State Association, the Defense Fund or the Public Health League, except in the financing thereof as above set forth.

Therefore, your committee respectfully recommends that this report be received and placed on file for action at the next annual session of the Washington State Medical Association; that the recommendations of this committee be placed before the component county societies of the State Association for their information and approval or disapproval; and that the committee be continued for one year.

(Signed) E. W. Young,
W. D. Read,
J. R. Morrison,
C. J. Lynch.

It was moved that the literature in regard to the Oregon plan be presented to the different county societies by the Secretary of this organization. Seconded and carried.

Report of A. M. A. Delegate

Dr. D. E. McGillivray, Delegate to the A. M. A., made the following report:

The House of Delegates convened with representatives from all states, from sixteen sections and a representative each from the U. S. Army, the U. S. Navy and the Public Health Service, in the assembly room, fifth floor of the American Medical Association building, June 9, 1924. This building has been increased in size and at the present time is a beautiful, well equipped home for the American Medical Association. The Association has at the present time $400,000 in bonds and negotiable securities with only $100,000 against the building or of a total debt. This home is a credit to the institution in every respect and has been wonderfully supplied with data concerning every man in medical practice, hospitals and different phases of medical subjects in its filing system. It has a full and authoritative library and in all publications related to the science of medicine and surgery. It certainly is a tribute to George H. Simmons, to whose genius the institution is largely due and to whom reference will be made later.

The House concerned itself with many different problems of practice, medical education, the training of nurses, the narcotic evil, the alcohol question and many other matters relating to the welfare and relationships of doctor and patient. Earnestness of mind and altruistic ideals permeated all actions of this body. It is impossible, in the belief of the writer, to go into or to see a meeting in any other line of endeavor, where more unselfishness and true helpfulness to humanity could be found than here. President Pusey gave a very fine message, in which many radical changes were offered. These in time will no doubt be worked out satisfactorily. Your delegate was on the Reports of Officers Committee and part of two days was spent in going over and making changes and recommendations in the various officers' reports. As the most of this is published in the Journal and is available in the printed reports of the House of Delegates, I will not go into it extensively here.

It was the unanimous opinion, however, of this committee that educational requirements of physicians should not be lowered or in any way interfered with, despite the fact that at the present time a young man is twenty-eight years of age or over before he can get down to actual practice. This was also true of the nursing profession, in which it was felt that three years training was necessary to properly equip a nurse for her duties. However, the consensus of opinion was that there was a great demand for nurses at a lower wage than prevails at the present time. How this problem can be worked out and just what will be the outcome, it would be difficult to say and the matter was left to the Council on Medical Education and Public Health.

There is an ample supply of physicians in the United States today but since the World War they have become unequally distributed. Many men have gone to the cities and have specialized in various lines, others have gone to the cities from the rural communities because of the fact that better facilities can be obtained for up-to-date treatment than in the country districts. This will no doubt adjust itself in due process of time. University extension courses for physicians in active practice in the various districts have proven wonderfully successful.

The unrecognized colleges (the diploma mills) came in for condemnation and, with the publicity given them in various instances, are fading away.

The matter of public health institutions was discussed at length as well as so-called life extension institutes, health associations, etc. These were condemned, largely because of the unfair advantage they take of the profession, exploitation of the profession for gain, and the insidious undermining of the patient's attitude towards his doctor. The methods of these institutions were unhesitatingly condemned and several men who are very prominent in the profession and who were duped into accepting positions on the board of governors of one of these institutes, announced their intentions of resigning immediately.

A resolution was introduced and passed, urging the right of physicians to prescribe alcohol in such quantities as his judgment dictated.

Periodic examination of the apparently healthy in a practical way has been undertaken both in Maine and Illinois and apparently is working out with much satisfaction. The consensus of opinion of several members who spoke on this was to the effect that the county society could undertake and encourage periodic health examinations by the family physician, supplemented by such other special examinations as might be required, the record of this examination to be filed with the county secretary or with the local medical library, where it could be made available in time of need.

The report of the Judicial Council was extremely interesting. Their report included the question of division of fees, status and powers of county societies, relationship of physician and cultists, etc. The general opinion was that the patient's best wishes should be first observed, but the question of consulting with an osteopath was discussed at length, the prevailing opinion being that only under exceptional circumstances should this be done. Section on Ophthalmology was asked to define its position with regard to the dispensing of glasses by physicians, charging retail prices therefore.

Hospital work of the Council of Medical Education and Hospitals is ever broadening in its scope and now has complete tabulated data on every hospital in the country. The ethical and professional attainments of those who are permitted to practice in hospitals were also included in this report. It will readily be seen that this mass of information is of great value to communities in widening the influence of the council over the ethics and standards of the hospitals.

Abstract of the Council's Report.

Medical Education.

1. Altho the total number of medical schools has been reduced from 160 to 80, the number of high grade, better equipped colleges has been increased from 2 to 74.

2. The total number of medical students was reduced from 28,142 in 1904 to 12,930 in 1919, but since 1919 the enrollments have been increased by nearly 1,000 students each year, the total number of students at present enrolled being approximately 17,808, the largest number since 1912.

3. The number of graduates of medical schools likewise was reduced from 5,747 in 1904 to 2,670 in 1918, but since 1918 there has been a rapid increase, interrupted only by the war class which graduated in 1922. An estimate indicates that in 1927 there will be 4,750 graduates, the largest number since 1908.

4. The higher entrance requirements and the other improvements made in medical education, therefore, are not causing a dearth in the numbers of either medical students or graduates. As a result of the changes, however, there has been a positive increase in the number of graduates who are better qualified, both educationally and professionally, from 267, or 5 per cent of all graduates in 1906, to 2,964, or 95 per cent of all graduates in 1923.

5. Altho the number of medical schools now is only one-half of what it was in 1904, the capacity has been greatly increased. Instead of only 156 students and 36 graduates for each college on the average in 1904, now each college on the average has 223 students and in 1927 will turn out about 60 graduates.

(Signed) D. E. McGillivray.

The report was accepted.

Deceased Members

The committee appointed to draw up resolutions concerning the deceased members presented the following report:

Whereas, The Great Physician of the Universe has called from their earthly labors our well-beloved colleagues:

H. A. Compton, Bellingham
W. S. Frost, Spokane
L. Woodruff, Asotin
J. W. Thomas, Seattle
A. F. Mattice, Seattle
D. Buckley, Seattle
John Hunt, Seattle
W. W. Potter, Spokane
McT. Fuller, Seattle
I. A. Parry, Seattle
C. Gilchrist, Wenatchee
C. G. Morehouse, Everett
C. W. Wiseman, Spokane
H. H. Gray, Chimicum
W. A. Shannon, Seattle

and,

Whereas: These colleagues have during their years of practice in their communities at all times and under most trying circumstances exemplified the high ideals of the medical profession; and,

Whereas: We feel that in their death the medical profession has lost honorable members, always ready to respond to the call of distress; therefore, be it unanimously

Resolved: That the Washington State Medical Association, in its thirty-fourth session assembled, hereby expresses its sorrow in the passing of these well-beloved colleagues; and be it further

Resolved: That we hereby formally express to their family, friends and patients this expression of our grief; and be it further

Resolved: That copies of these resolutions be spread upon the minutes of this Association and a further copy, under the seal of the Association and properly signed by its officers, be forwarded the families of our deceased colleagues.

(Signed) Dr. A. E. Gerhardt,
Dr. S. M. McLean,
Dr. J. T. Dowling.

It was moved that the report of the committee be adopted. Seconded and carried.

Election of Officers

The House of Delegates proceeded to elect officers for the ensuing year. (Those whose terms did not expire are added to complete the list.)

President—Dr. D. A. Nicholson, Seattle, term expires 1925; 1st Vice-Pres.—Dr. F. H. Brush, Yakima, term expires 1925; 2d Vice-Pres.—Dr. A. A. Matthews, Spokane, term expires 1925; Secy.-Treas.—Dr. C. H. Thomson, Seattle, term expires 1925; Asst. Secy.-Treas.—Dr. J. H. O'Shea, Spokane, term expires 1925.

Trustees

1st District—Dr. A. E. Burns, Seattle, term expires 1925; Dr. A. O. Loe, Seattle, term expires 1925; Dr. R. J. O'Shea, Seattle, term expires 1926; Dr. C. R. McCreery, Tacoma, term expires 1926.

2d District—Dr. J. Munly, Spokane, term expires 1925; Dr. Elmer Hill, Walla Walla, term expires 1925; Dr. S. S. Oppenheimer, Spokane, term expires 1926; Dr. C. B. Ward, Spokane, term expires 1926.

Journal Trustees

Dr. S. M. Langworthy, Spokane, term expires 1925; Dr. H. D. Dudley, Seattle, term expires 1925; Dr. R. C. Plummer, Seattle, term expires 1925.

Delegates to A. M. A.

Dr. F. Epplen, Spokane, term expires 1925; Dr.

F. H. Maxson (alt.), Seattle, term expires 1925; Dr. D. E. McGillivray, Port Angeles, term expires 1926; Dr. D. H. Palmer (alt.), Seattle, term expires 1926.

Seattle was selected as the next place of meeting.

KING COUNTY MEDICAL SOCIETY

MINUTES OF MEDICAL SECTION

September 15, 1924

Dr. Homer Wheelon reported 16 cases of congenital absence of upper lateral incisor teeth, in 9 of which both were missing and in the remainder only one. There were certain characteristics in all; first a peculiar ashen pallor, secondly all were apparently transmitted through the female sex, thirdly all were in American patients and none in the pure stock of the elemental races. The Wassermann was negative in all the cases but one and that one was only 2 plus.

Forty per cent of the cases showed a definite emotional instability, while 24 per cent had brothers or sisters with either physical deformities or emotional disturbances. Most of the cases either gave a history of some evident endocrine disturbance or else showed such a disturbance at the present time.

A resume of the literature showed very few allusions to this condition. Such articles as did exist however drew varying conclusions. One of these was to the effect that this condition was homologous to cleft palate and hare lip. Another placed it on the basis of an endocrine disturbance.

Dr. Wheelon summarized his observations to the effect that the cases were hereditary; that fertility is apparently unaffected; that endocrine disturbances have occurred at some time of life in practically all cases. He then showed slides of these cases and in addition several endocrinopathies with no abnormalties of the teeth.

The discussion was opened by Dr. Roy C. West who stated that the tendency of the human race is toward the ultimate complete absence of teeth. The upper lateral incisors are the weakest of the teeth and as a result will be the first to disappear. The next in order will probably be the third molars and then the bicuspids.

Some of the cases of this abnormality are probably due to direct heredity, but no doubt a few are due to an abscessing of the deciduous teeth with destruction of the roots of the permanent ones. The absence of these teeth never occurs in the races lower in the scale of civilization than ours because they need the teeth in their daily life. The greater the degree of civilization the less is the need of teeth. He further stated that there was probably never a congenital absence of deciduous teeth. His conclusion was that the condition was probably of no great pathological significance.

Dr. Roy Jones questioned the effect of consanguinity in these patients. Dr. H. E. Coe and Dr. L. R. Dawson cited other cases, which apparently showed no abnormalties of the endocrines. Dr. Wheelon in closing stated that no consanguinity was noted in his cases.

Dr. Lester Palmer read a very illuminating resume of the statistics relative to the death rate from Diabetes Mellitus in the United States, the State of Washingon and the City of Seattle.

The death rate from diabetes, while not one of the greatest percentages, is relatively high and up to 1923 was showing a very striking increase. This was summarized as 36 per cent from 1910 to 1922. The highest rate was in 1922 with a very sharp drop coincident with the beginnings of the use of insulin.

Dr. Palmer then brought out the very pertinent question that with Joslin's estimate of one million cases in the U. S. and an estimate of 10,000 cases in the state, many of which are temporarily arrested by the use of insulin, may it not be that in a few years the death rate will again begin to soar. If this possibility is to be averted, it is certain that the dietary regime and the teaching of the patients to control their own urine by diet largely, must become more and more general.

Dr. D. H. Nickson pointed out that there is a certain similarity between shock and diabetic coma and for that reason it seemed that the addition of insulin to the glucose given intravenously should be of value. He reported three cases in detail who gave every promise of succumbing to shock but recovered following the glucose and insulin.

He also reported an original piece of work with the injection of lethal doses of acetone into the veins of rabbits. Those receiving glucose and insulin recovered completely while all others died. He talked on the chemical processes whereby in starvation and shock the oxidation of body fat liberates the ketones which have a toxic effect. This effect, however, is averted by the use of glucose.

Dr. Everett O. Jones opened the discussion by elaborating on two of the cases mentioned by Dr. Nickson. He also spoke of the use of this mixture in other toxemias.

Dr. Charles E. Watts called attention to the complicated processes that enter into shock, and also that a majority of cases have some acidosis. He called attention to the ideal conditions for the development of shock in some cases, who were prepared for operation by the giving of a drastic purge; the abstinence from food and vomiting following the anaesthetic, together with the effect of the anaesthetic itself.

Dr. Lester Palmer questioned the necessity of insulin with the glucose.

Dr. Herbert Coe spoke on the several causes of acidosis in children:

(a) Fright.
(b) Starvation.
(c) Sepsis.
(d) Surgery.

In this condition there is a reduced function of all the ductless glands, the pancreas included. The use of the insulin no doubt would aid in metabolism and more completely utilize the glucose.

Dr. Wheelon questioned the condition of blood sugar in these cases.

Dr. Forbes cited his experience in the intravenous use of glucose which he has made a routine in certain types of cases. It has given excellent results and may be given in unlimited quantity and over a period of one to two days. It should be given slowly however. It provides nutrition and fluid; aids in elimination and dilutes the toxins.

Dr. Nickson in closing said that in one case a hypoglycemia was noted. That glycosmuria had occurred in some cases wherein insulin was not given, but none noted in cases with insulin.

JAMES A. HUNTER, *Secretary.*

KING COUNTY MEDICAL SOCIETY

MINUTES OF SPECIALIST SECTION

September 22, 1924

Dr. Arthur Crookall presiding

Dr. C. C. Tiffin gave a very instructive and interesting paper on Local Anesthesia in Goitre Surgery. The tendency of many surgeons to disregard local anesthesia is due to a lack of knowledge of the technique. This technique must be carefully studied otherwise anesthesia is incomplete and perfect results are not obtainable. The question of hemorrhage is important. Many times a cough will dislodge a temporarily placed clot or a poorly secured ligature. Under local anesthesia the patient is not continually rebreathing particles of mucus, laden with infection and there is much less possibility of pneumonia. Discussion by Drs. Millington, Wright and Dudley.

Dr. John H. Harter discussed the relation of prolonged clotting time to hemorrhage from tonsillectomy. His statistics were made from over 418 cases. His deductions are that prolonged clotting time up to fifteen minutes bears no relation to hemorrhage from tonsillectomy. However in case of prolonged clotting time, a careful history must be taken to rule out any of the general diseases, especially hemophilia which might cause the delayed clotting. In discussing hemophilia there are but two diagnostic factors. (1) History. (2) Prolonged clotting and bleeding time. Dr. Harter believes the history is of paramount importance. In cases with a history of bleeding no operative procedure should be attempted except as a life-saving measure.

Dr. E. F. Chase opened the discussion and Dr. George Miller made a few remarks on hemophilia.

There were 35 members present.

CHAS. D. SHANNON, *Secretary.*

SPOKANE COUNTY MEDICAL SOCIETY

Pres. C. E. Butts; Sec'y., G. H. Anderson.

The regular meeting of the Spokane County Medical Society was held September 25, in the assembly room of the Old National Bank Building, Spokane, Wash. Minutes of the previous meeting read and approved.

Dr. C. J. Rohwer, from the Mayo Clinic, read a paper on "Benign Extra-Vertebral Tumors Producing Symptoms of the Spinal Cord with a report of three cases." Discussed by Dr. Price.

Dr. McCornack discussed poliomyelitis, giving a resume of the present epidemic. Discussed by Drs. Price, Fischer, Hendricks, Nealy, Barnett, Current and Epplen.

The transfer of Dr. A. D. Schlotthauer from the Walla Walla Valley Medica Society was unanimously accepted.

Dr. Robert Lee Rotchford was voted into the society unanimously.

There being no further business to come before the society the meeting adjourned.

MINUTES OF GENERAL MEETING

A general meeting of the King County Medical Society, October 6, 1924, was called to order at 8:15 p.m. by President Maxson. The minutes of September were read and approved.

A proposal to amend the By-Laws was read, as follows: To add to Article VIII, Section 1, the following paragraph:

"Beginning August 1, 1924, the entrance fee of those elected to membership after August 1 of any year shall be ten dollars, of which five dollars shall be set aside for a sinking fund with which to purchase a home for the Society."

The application of Dr. John E. Wallace was read.

Dr. L. A. Fullerton and Dr. L. L. McCoy were elected to membership.

Dr. C. E. Hagyard then presented the paper of the evening on "Chronic Colitis." The study was based on 135 cases of colitis, excluding mucous colitis, specific ulcerative colitis, tuberculous, syphilitic and parasitic disease.

No specific bacterum has been proven to be the etiological agent, although the author believes from clinical observation that the disease is due to focal infection, probably streptococcal. The onset is in early adult life in most cases. Females were more commonly attacked, in the ratio of 82 to 53. Specific colitis may be followed by the chronic non-specific variety. Appendicitis may be associated, but is not a cause, probably. Cathartics and rough foods insure the chronicity of the disease.

The pathology is that of a slow proliferative inflammation affecting all the layers of the colon, beginning in the rectum and sigmoid. The protoscopic appearance was described, there being five overlapping groups: hyperemia and swelling, hypertrophy, granulation, atrophy, and ulceration.

The symptoms are extremely variable, and include anorexia, loss of weight, anemia, weakness, nervousness, abdominal distress, and often pain referred to the back. Headache, apathy, fatigue, and general malaise are due to the low-grade infection. The pain is most commonly in the left side of the abdomen, next in the flexures, then in the cecal region. It is dull in character, most common in the morning, and worse after eating. tI is worse after a bowel movement, and an enema makes it worse. Vomiting, eructation of gas, sour stomach, and pylorospasm are not common. Rumbling and gurgling are common. Nausea often occurs. Constipation is an early symptom, and may last for years; it is due to spasticity. Later, the stools are loose, and then

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when the colon becomes more rigid, dysentery develops. Many complain of pruritus. Nervous and mental symptoms are common, probably the result of low-grade chronic infection.

A careful history is very important in making the diagnosis. On physical examination, the colon will be found to be tender, and palpation under the fluoroscope will often prove that the tenderness is limited to the colon. Proctosigmoidoscopy is the most valuable diagnostic method. Examination of the stools is important, as to consistency, presence of blood, pus, mucus. The x-ray is of value, but should not be depended on alone, because the text-book picture is seen only in the advanced cases.

A large per cent of this series had had various operations in the hope of relief, without desired results. The differential diagnosis is therefore most important. Conditions especially difficult to rule out are cholecystitis, appendicitis, exophthalmic goiter, pelvic inflammation, and peptic ulcer.

Prophylaxis includes the development of hygienic habits, especially as regards the bowels, early removal of possible foci of infection, proper treatment of acute intestinal parasites.

Active treatment may require some of the above measures, the interdiction of cathartics and roughage, careful supervision of the diet, and in some cases, rest. Oil enemas, hot water enemas, in some cases astringents, and antispasmodics, are of value. Some patients are so unfortunate as to require cecostomy, appendicostomy, or ileostomy.

In discussion, Dr. L. J. Palmer stated that in dietary management, the mechanical factor is the most important. When irrigations are used, the temperature should be as high as can be tolerated without injury. Most of these patients are extremely neurotic, and surgery should be approached cautiously, to avoid mistakes. One must recognize that progress is extremely slow, with these cases.

Dr. C. E. Watts laid stress on the history in making a diagnosis, and warned against accepting a negative x-ray report. The symptoms, physical and fluoroscopic findings, may vary greatly from day to day.

Dr. H. J. Davidson stated that this condition should be recognized more frequently. A tubular colon means ulcerative colitis. Kaolin, an ounce three times daily, is of value.

Dr. F. M. Dwyer said that the absence of haustration alone is not diagnostic of ulcerative colitis; the diameter must also be decreased. A negative x-ray report does not rule out colitis. The use of antispasmodics in connection with x-ray is commended.

Dr. H. D. Dudley discussed the difficulty of differential diagnosis, especially as between colitis and gall bladder disease.

Dr. Hagyard, closing stated, that the average conception of colitis is the serious case who is an invalid, but it was his wish to call attention to the early cases. The course of the disease is extremely variable, even under the best of management.

There were 58 present. Meeting adjourned.

C. E. WATTS, Secretary.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of the Pierce County Medical Society will be held at the County Hospital, Tuesday, October 14, 1924, 8:30 P. M.

Miss Ragland spoke of the establishment of a Central Nurses' Directory which it is proposed to establish in Tacoma by the Third District Nursing Association, and asked for the backing of the doctors in this enterprise. Dr. Engels moved that the plan of the nursing bureau as outlined by Miss Ragland be approved by the Pierce County Medical Society. The motion was carried unanimously.

Dr. Keller spoke of the status of the poliomyelitis epidemic. Dr. Engels gave a statistical report of the poliomyelitis cases to date. He also said that it was planned to open the schools next Monday if the outlook kept improving.

A communication was read from the Maternal Welfare Association.

Dr. Staatz then took charge of the meeting, and the following clinical casts were presented:

1. Tertiary lues, Dr. Joseph Turner. This was a man 63 years of age, with a history of primary lesion forty years ago, with no treatment until three years ago. The main findings were ulceration through the right cheek into the antrum, with enlarged heart and aorta. Sulpharsphenamin was given, when the heart went bad. Dr. Turner cautioned against intensive treatment with arsenicals of this class of case without first giving preparatory treatment with iodids and mercury.

2. Penetrating abdominal injury, Dr. Ludwig. This was a young man who received a stab wound in the mid epigastrium, with perforation of the stomach and subsequent abscess of the pelvis. After drainage of the abscess, the patient is making a good recovery.

3. Tumor of the base of the tongue, Dr. Howe. This was a male, age 56, from whom a large tumor was removed from the bas eof the tongue. This tumor is probably malignant, although it was removed without hemorrhage and was not painful.

4. Bone abscess in a child aged 12, Dr. Staatz.

5. Fracture of radius and ulna, treated by open method, no graft, good result, Dr. Staatz.

6. Fracture of patella treated by circular ligature, Dr. Staatz.

7. Fracture of the anatomical neck of the humerus, open operation, no graft, Dr. Staatz.

8. Fracture of humerus treated with intramedullary splint, Dr. Staatz.

9. Adams-Stokes syndrome, heart block, Dr.

The Society gave a unanimous vote of thanks and appreciation for the excellent program rendered by Dr. Staatz and his assistants. After the meeting Miss Edwards had prepared a lunch of doughnuts and coffee.

A regular meeting of the Whitman County Medical Society was held Sept. 29. Dr. Byron Henry of Endicott, who has recently returned from an extensive post-graduate trip east, read a paper on "The Early Diagnosis of Tuberculosis." Dr. R. G. Kimsey, of Pullman, read a paper on "Unusual Cases Met With in Practice." Dr. F. X. Emerson, of Colfax, talked on Business Problems in Medicine.

The Clallam County Medical Society held a meeting at Rosemary, Sept. 20, for dinner and conference. Dr. D. A. Nicholson, president of the State Medical Association, and Dr. C. H. Thompson, secretary of the State Association, attended the meeting.

THE PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

The Puget Sound Academy of Ophthalmology and Oto-Laryngology met at the Virginia Mason Hospital at 8 P.M., October 21, 1924, Dr. J. T. Dowling, President, presiding.

Dr. L. H. Klemptner presented two cases of malignant tumors of the nose and throat. The first case, that of a man 59 years old, in which a carcinoma of septum and floor of left nostril had been removed. The microscopic examination of the specimen showed the tumor to be made up of tall columnar epithelial cells. The other case was a lymphosarcoma in a man 68 years old which before treatment had been a hard friable tumor of the nasopharynx in the region of the left fossa of Rosenmueller. It bled freely on several occasions. Radium was used with good result in each case.

Dr. Bourns, guest of the Academy, discussed the use of radium and deep x-ray therapy in nose and throat work. His conclusion in regard to malignancy was—in sarcoma radium gives good results if the rays are able to get to the most distant parts of the tumor. This may be difficult in tumors of the ethmoid and similar places difficult to reach, in carcinoma it gives temporary, fair results but the growth is more likely to recur. Then the pathology is not always certain. If the tumor returns and the patient dies there is no question of its being cancer, but if the patient does not die and there is no recurrence there is always a question as to the diagnosis.

X-ray and radium have a great field in conditions not malignant, such as scar tissue, naervae, using short doses, formerly called stimulating doses.

Dr. Bourns observed two cases of carcinoma of the cornea recently at about the same time. The first was given radium, unscreened for one hour at a time, four or five times. The second was treated surgically. The latter has already had a recurrence while the first has not. Contrary to early belief, all parts of the eye are quite tolerant to rays up to actual cauterization and destruction of cells.

Dr. J. H. Harter presented a man thirty years old who for several years had moist eczema of left auditory canal. For the past year there has been a gradual hypertrophy of the skin and sucutaneous tissue of the external meatus and canal wall. This has shrunken quite markedly under x-ray treatment.

Dr. E. F. Chase presented two cases. The first, a Japanese man whom he saw first six months ago. He had a fungoid mass involving the entire epiglottis. A piece removed for diagnosis showed it to be tuberculous with many giant cells. The man has been treating himself with sunlight.

His second case was that of a young man, bookkeeper by occupation, who for the past year and a half has been suffering pain in left ear and shoulder. Has had tonsillectomy and ear treated. Upon examination of the nasopharynx a small growth was found in the fossa of Rosenmueller. The pathologist's diagnosis of a section was "carcinomatous polyp." He had two doses of radium with no recurrence of the pain.

Dr. Carl M. Burdick presented three congenital cases. One of the micropia in a baby three months old. The lens in this eye was cataractous as well.

The other two cases were father and son who have congenital optic atrophy. The nerve heads of each were glary white, laminated—no retinal change. Wassermann on blood of each is negative. The father's vision failed early in life. The son, sixteen years of age now has completed a grade school education. His vision is 20/70, distant vision is not clear and accommodatio npoor.

Dr. Claire Shannon showed three patients in whom foci of infection had been cleared up by radical mastoid operation for chronic otitis media and mastoid infection.

Dr. Schwartz presented a case of trophic keratitis. The patient came down from Alaska three months ago with a white spot in the center of right cornea with defective vision. He had no pain and very little ciliary injection. Vision consisted of light perception and light projection. Has had thirteen treatments of quartz light, one minute each. Under this treatment the patient can distinguish objects at five feet.

He also presented a man whose vision has been failing for three years. Has been unable to read for three months. The fundus of each eye shows a well-marked cholsed disc. The neuropathology has been worked out by Dr. Jacobson and the cause of the eye condition, he says, is brain tumor.

Dr. M. D. Pontius presented the case of a man 68 years of age who was struck on the eye with a rock a month ago. Following the injury he had an increase in vision, the lens being displaced in the vitreous. The displaced lens was removed at operation, which proves the fallacy of a statement made at the last meeting, to the effect that a lens loose in the vitreous cannot be removed without loss of the eye. The orbicularis was firs injected with apothesine. No stop speculum was used, the assistant holding the lid. Section was made entirely in the cornea and the lens was extracted with a blunt hook and with a sharp hook the capsule was removed. The patient was in the hospital five or six days and improved so that he was sent home. While at home the wound opened, asd was closed. Since then it has remained closed and the patient can see large objects.

The applications of Dr. L. L. McCoy and Dr. Robert Wrightman were read.

Dr. Clarence W. Shannon was elected to membership. Twenty-three present. There being no further business to come before the Academy, same adjourned at 10:15 P.M.

MORRILL J. MORRIS, Secretary.

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BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Selected Essays on Orthopedic Surgery. By Newton Helman Shaffer, MD., F. A. C. S. Emeritus Professor of Orthopedic Surgery, Cornell University, etc. Forewords by Drs. Lovett and Fisher, etc. Cloth, 636 pp. G. P. Putnam Sons, New York and London, 1923. $5.00.

This is a collection of papers upon Orthopedic subjects, published in various Medical Journals, between 1877 and 1898. They are the literal output of the author's mind and are in no way modernized or re-edited.

The value of this work is not that of a complete authoritative resume of the modern concepts of Orthopedics but rather lives in the incomplete historical progress of various allied Orthopedic subjects. To either the specialist or general practitioner this book could in no way be classed as a text book upon the subject. But to a writer upon certain orthopedic topics it contains a great many things, more especially along the lines of diagnosis, that would be of considerable value in codifying and comparing the advances of orthopedic knowledge along certain lines.

The book could well merit a place upon a general library shelf, to be used occasionally for special reference. But in no sense should it be purchased by the individual under the impression that it is a strictly modern, more or less complete, work on Orthopedics. Its value is chiefly historical.

J. C. Brugman.

Ransom's Anatomy of the Nervous System. The Anatomy of the Nervous System, from the Standpoint of development and function. By Stephen W. Ransom, M.D., Ph.D., Professor of Anatomy in Northwestern University Medical School, Chicago. Second Edition, Revised. Octavo volume of 421 pages with 284 illustrations, some of them in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $6.50 net.

The first edition of this book proved so popular that the second should be even more successful. This edition contains the more recent advances in the subject. The laboratory outline is lengthened. The book is essentially a text book, excellent for reference. The anatomy of the nervous system is taken up not as the structure per se but from the angle of its development and functioning, thus doing away with the cut and dried anatomy usually given. There are a series of case histories especially helpful in following up the damaged cell structure and nerve tracts.

WILT.

Neurologic Diagnosis. By Loyal E. Davis, M.D., Associate Professor of Surgery, Northwestern University Medical School; Fellow of the National Research Council. 12mo of 173 pages with 49 illustrations. W. B. Saunders Company, Philadelphia and London: 1923, Cloth, $2.00 net.

The author has admirably succeeded in bridging the gap between the anatomy and the pathology of the nervous system. The first half of the book is devoted to the anatomy and the physiology and the second to case histories, most happily presented. He takes in turn each one of the common nervous diseases, illustrates it with a clear cut history together with diagrams of the parts affected, follows this with a series of questions designed as an aid to diagnosis, gives a thorough discussion of the symptomatology, and ends with a final diagnosis.

I believe this to be the only logical way to study diseases of the nervous system: to get at the mechanism and remember it.

WILT.

Annals of Roentgenology. A Series of Monographic Atlases. Edited by James T. Case, M.D., Ex-President of The American Roentgen Ray Society. Vol. IV, Normal Bones and Joints, Roentgenologically considered by Ididore Cohn, M.D., F.A.C.S. With a forward by Rudolph Matas, M.D. Paul B. Hoeber, Inc., New York. 218 pp. Cloth. 1924. Price, $10.00.

The fourth volume of this series of monographic Atlases sustains the high standard of value of those which have preceded it. The studies of normal bones and joints on which this volume is based are characterized by a thoroughness essential for such work. The field is a great one and is worthy of meticulous care which has been given it in this monograph. The work will prove of great value not only in the library of the roentgenologist but in that of the surgeon as well.

BOURNS

X-Ray and X-Ray Apparatus. An Elementary Course by John K. Robertson, M.D., Associate Professor of Physics, Queens University, Kingston, Canada. Cloth, pp. 228, MacMillan Company, New York. 1924.

The author well describes his work as "a book (which) will fill a need as a basis of instruction in the physical and of x-ray work, both in medical schools and in hospitals."

And with the author's opinion that a clear understanding of "the broad basic principles of the fundamental sciences" is essential to success in the use of radiations, especially in therapy, the writer is quite in accord.

In the thirteen chapters of this book the writer has covered in a thorough but clear way the fundamental physical principles of this science. No clearer exposition of the subject has come to the attention of the writer and as the book is just from the press it brings the subject well down to date. Its usefulness to all who use radiation, especially for therapy, will quickly be recognized by the reader.

BOURNS.

Manual of the Diseases of the Eye. For students and general practitioners. By Charles H. May, M. D., Director and Visiting Surgeon, Eye Service, Bellevue, etc. Eleventh Revised Edition. 374 original illustrations. Cloth, 445 pp. Wm. Wood & Co., New York, 1924. $4.00.

When a book has gone thru ten American and thirty foreign editions in eight languages it is so well known that there is little for the reviewer to say except that in the eleventh American edition the author still adheres to his principle of saying enough but not too much, as announced in his preface to the first edition in 1900.

F. A. Brugman.

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ORIGINAL CONTRIBUTIONS

A NOTE ON RENAL FUNCTIONAL TESTS FOR THE GENERAL PRACTITIONER

(With special reference to the salivary urea index)

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The first or primitive phase in the study of renal function probably began with analysis of the urine by the Sumerian and Babylonian physicians at about 4000 B. C. Lore with regard to urine was increased extensively through the centuries, notably by Galen who considered urine a blood filtrate, and later by Theophilus, 610 to 641 A.D., who recorded the first physical test on urine. After this no advances of special importance were made until the seventeenth and eighteenth centuries when van Helmont introduced gravimetric studies of urine, and Cruickshank discovered the first chemical test for albumin, and established the connection of albumin with dropsy.

These observations were not, of course, correlated with clinical symptoms and pathologic conditions of the kidney until the work of Bright, in 1836, inaugurated the second or scientific phase in the study of renal function. Following the clinical studies, there has been in the modern phase a gradual development with the discovery of certain useful renal functional tests which have been a great aid in early diagnosis and differentiation, in the indication of proper treatment, and in prognosis.

Besides editorial discussions,[4] [5] there have appeared in this journal within the last three or four years a series of comprehensive articles on renal function by Rowntree, Christian, Longcope, and Hitchcock. These men have outlined the modern conceptions of normal renal physiology, or renal pathology, and treatment of renal disorders, and have included full discussions of the more important and useful functional tests. I shall not attempt here a critical survey of the subject, but shall discuss only certain practical phases.

A number of these tests, although they give exceedingly important data to the internist with hospital facilities, are impractical from the standpoint of the general practitioner. The presence of albumin, preferably with casts, in the urine is the main requirement for the practitioner to make a diagnosis of nephritis, and a diet, low in protein and fluid, forms the chief treatment. The exact type of the nephritis is often uncertain to him, and indeed, after the most exhaustive functional studies may remain so. There are, however, four simple, practical tests which will give material aid in a more correct understanding of the type of the disease and the mode of treatment. There are, broadly speaking, as pointed out by Widal and Javal, two main forms of chronic nephritis: (1) the azotemic form, in which the glomeruli are chiefly damaged, with resultant difficulty in the excretion of nitrogenous waste bodies, and the presence of these substances in abnormal amounts in the blood; and (2) the hydremic, or chloremic form, in which edema is a prominent feature, the condition being a "salt and water nephritis," and the pathologic changes being largely in the renal tubules. A combination of these two main types is common, and often the end-result of either type.

Treatment of the pure form of these types is quite varied. In the azotemic form, the treatment is sparing and eliminative: (1) preventing further accumulation by means of a low protein diet (approximately 40 gm. daily), and (2) forcing rather than withholding fluid, with sweating and catharsis as adjuvants. In the chloremic form the treatment is reversed. Fluid and salt intake should be minimal, while protein restrictions may not only be unnecessary but contra-indicated. Epstein actually uses a high protein diet to take advantage of the specific dynamic action of protein to restore the normal equilibrium of blood water, chlorids, proteins, and lipoids.

RENAL FUNCTIONAL TESTS

Since results are often unsatisfactory by a routine management of all types of cases, the importance of renal functional tests that will give fairly specific therapeutic indications must be apparent to the practitioner. The four tests most easily adapted for general use and which give valuable data are: (1) the phenolsulphonephthalein test,[13] (2) the water, and (3) the concentration tests,[10] and (4) the salivary urea index.[6] [7] The first three are well known and will be but briefly mentioned. The salivary index is a recent development and will be described in detail.

The phenolsulphonephthalein test.—This was the first practical renal functional test devised, and remains probably the most useful. The dye may be given intravenously or intramuscularly. At the Mayo Clinic on the service of Dr. Rowntree, who originated the test, the dye is generally given intravenously, and normally there is a return of from 50 to 60 per cent in the urine collected for two hours after the injection. After intramuscular injection, a return of from 40 to 60 per cent of the dye in urine collected for two hours and fifteen minutes is considered normal.

The water test.—"Fifteen hundred cubic centimeters of water is given on an empty stomach at 8:00 a.m. Urine collections are made at half-hour intervals for the next four hours. The normal output in this period varies between 1200 and 1800 c.c.; the specific gravity should at least be as low as 1003."[10]

The concentration test.—"The patient is given a diet for one day consisting of 20 per cent solid food only; no fluids are given. The urine is collected at three-hour intervals. The specific gravity should reach 1030."[10]

The two latter tests, devised by Volhard and Fahr, and used also by Addis and Shevky, show the reserve excretory powers of the kidney.

If there is fixation of specific gravity in the absence of edema, it is a direct indication for forcing fluids, or at least for keeping up an intake adequate to prevent nitrogen retention.

Salivary urea index.—The determination of the presence or absence of retained nitrogen bodies in the blood is of great importance in indicating proper treatment. These metabolites are mainly urea, uric acid, creatinin and amino-acids. Uric acid is increased in the blood, probably before urea, and creatinin retention gives more information than urea retention with regard to the severity of the renal damage and the life expectancy. It should be added that Brown and Roth have shown that the anemia accompanying nephritis is of the same grave prognostic importance as creatinin retention. The determination, therefore, of hemoglobin and the erythrocyte count, which are possible to the practitioner, will give important data. From the practical standpoint, the determination of the blood urea generally gives the greatest amount of information. Tho its determination is fairly simple in the hands of a laboratory worker, it is hardly within the realm of the general practitioner. Therefore, the salivary urea index test, which may be made simply within ten or fifteen minutes, and which gives practically the same information, is especially suitable for routine office work. Before describing briefly the technic and principle of the test, an illustration of its practical use may be given.

ILLUSTRATIVE CASE

Case 1. A woman, aged forty years, was sent to the hospital about midnight for an emergency transfusion. She had been having abdominal pain and slight bloating for nine months, with irregular menses and metrorrhagia. There was slight edema of the ankles and progressive fatigue and dyspnea. The attending physician had interpreted the evident anemia as resulting probably from a fibroma or malignant condition. When she failed to respond to intravenous hematics and "electric" treatment, she was referred for the transfusion.

Examination disclosed, besides the definite anemia, marked hypertension with myocardial degeneration and insufficiency, and edema of the extremities. The breath was uremic, and the condition was evidently the end-stage of cardiovascular renal disease with the anemia of renal insufficiency. Within fifteen minutes the salivary urea index confirmed the diagnosis of uremia by the finding of a mercury combining power of 165 c.c. for each 100 c.c. of saliva, denoting a blood urea of 200 mg. for each 100 c.c. of blood. The following morning the actual blood urea was 213 mg. for each 100 c.c. In spite of treatment, however, the patient died in a uremic convulsion that afternoon. In this instance, although the more elaborate tests for renal function were not available to the attending physician, the early use of the salivary urea index or the phenolsulphonephthalein test would have given a more complete diagnosis, and might probably have been the means of postponing or alleviating the insufficiency.

Principle of the salivary urea index.—With urea retention in the body, there is an increase in the salivary urea, proportionate to the rise in the blood urea. Certain salivary constituents have the property of forming compounds with mercury, and of these, the salivary urea is the dominating mercury-combining element. Therefore, urea retention in the body is indicated by a rise in the mercury-combining power of saliva. The mercury-combining power of 100 c.c. of saliva, measured in cubic centimeters of 5 per cent mercuric chlorid, is called the salivary urea index.[8]

End-point method. — When mercuric chlorid is added to saturated sodium carbonate, a reddish brown precipitate of a mercury oxychlorid is formed. If the mercuric chlorid is first added to saliva, and then a drop of the saliva-mercuric chloride mixture added to saturated sodium carbonate solution, no reddish brown precipitate will occur until free mercury is present; that is, until the mercury-combining power of the saliva is entirely satisfied.[8]

Collection of saliva.—After the mouth has been thoroly washed with half a glass of water, a small piece of paraffin is chewed to stimulate salivary flow. Paraffin of a low melting point is desirable as it does not crumble readily, or a wad of paper may suffice; but chewing gum interferes with the end-point and should not be used. About 8 c.c. of saliva, Specimen A, is collected in a small receptacle. A similar amount, Specimen B, is collected in a second receptacle. Specimen A is used only as an approximate check, as it may contain food particles, rinse water, and so forth, which may alter its mercury-combining power. Specimen B is used for the determination of the salivary urea index.

The determination on Specimen B should be made promptly, or, at the latest, two or three hours after collection, to forestall bacterial action, which would cause a rise in the mercury-combining power. If the specimen cannot be tested promptly, bringing it to a boil for a few seconds will prevent the bacterial decomposition.

Titration.—One drop of saturated sodium carbonate is placed in each depression of a porcelain spot-plate. Five cubic centimeters of saliva from Specimen B are carefully measured into a small flask. From a burette, or pipette, 1.5 c.c. of 5 per cent mercuric chlorid is added to the saliva and shaken. With a small glass tube, a test drop is removed from the saliva-bichloride mixture and added to one of the drops of sodium carbonate on the spot-plate. The remainder of the contents of the tube used to remove the test drop should be blown back into the flask. If a brownish-red tinge does not promptly appear on the porcelain plate, but instead, no color, or a canary yellow, the titration must be carried further. About 6 drops of mercuric chlorid should be added, mixed, and tested again with sodium carbonate; this procedure is continued and mercuric chlorid added to the saliva in the flask until the test drop shows the first definite trace of brownish precipitate which should develop in about three seconds. Since the salivary urea index indicates the number of cubic centimeters of bichlorid used for 100 c.c. of saliva, the number of cubic centimeters of 5 per cent bichlorid added to 5 c.c. of saliva to reach the end-point are multiplied by twenty to give the salivary urea index. If more than 3 or 4 test drops are removed, correction should be made by adding a value of 2 to the salivary index for each 3 or 4 drops used.

With saliva from patients with very high urea retention, determination of the end-point is a little difficult, as a brown precipitate tends to appear slowly before the real end-point. The latter, however, may be determined when a definite brown precipitate appears promptly within three seconds.

Although the flasks and a burette will suffice, for the convenience of the general practitioner, the necessary reagent bottles, collecting flask and calibrated index tubes have been assembled in a small box which may be carried in a handbag or may serve as a compact laboratory outfit. The technic is slightly more simple if the apparatus* which has been previously described is used.[8]

Clinical interpretation.—The normal salivary urea index is between 30 and 50 c.c. of 5 per cent mercuric chlorid for each 100 c.c. of saliva. When urea retention occurs in the body, the salivary urea index rises in proportion to the retention. The significance of the salivary urea index in retention should be understood per se, but for the sake of the clinical interpretation of the salivary urea index in familiar terms, the probable association between the salivary index and the blood urea is given by the formula: probable blood urea = 1.43 × salivary index — 34. This formula was developed by a correlation of the two values in about 900 cases. For example, if the salivary urea index equals 100 c.c., the probable blood urea equals 1.43 × 100 — 34, or 109 mg. for each 100 c.c. of blood.[8]

PROBABLE EQUIVALENTS[8]

Salivary urea index		Blood urea, mg. per cent
30 to 40	Normal values	10 to 24
50		40
60		53
70		67
80		81
90		95
100		109
110		124
120		138
130		152
140		166
150		180
160		195
170		209
180		223
190		237
200		250
210		265
220		279
230		294
240		307

The original articles contain a more complete discussion of the method and its clinical applicability and interpretation. Briefly, however, altho a borderline retention has occasionally been missed, so far in our series no definite urea retention has been overlooked with this test, even tho retention may be considerably below the threshold of clinical uremia. Calvin and Isaacs have recently used the test successfully in a series of 200 children.

DISCUSSION AND SUMMARY

From the clinical picture alone, in cases of chronic nephritis it is often impossible to appreciate adequately the gravity of the disease, and death in uremia may be preceded by apparently only a few days of illness. Furthermore, general metabolic disturbances are associated with nephritis, and as Christian and others have emphasized, renal functional tests alone will not always unravel the pathologic puzzle. The aphorism used by Winslow is apt, "that one swallow does not make a summer, nor one test a diagnosis." However, the simple tests outlined will be serviceable from the standpoint not only of better differentiation, but also of better treatment, for their findings lead to specific therapeutic indications. Probably the ideal renal functional test is yet to be found. The indican retention test of Baar and the benzoate test originated by Kingsbury are thot to give earlier evidence of renal damage than the four tests herein discussed, but they are not so simply made, and from the practical standpoint, the general practitioner rarely has occasion or opportunity to investigate renal function at a period prior to the time when the four tests described will give equally important data.

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* Made by Hynson, Westcott and Dunning, Baltimore.

THE KAHN PRECIPITATION TEST AS A ROUTINE TEST IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS

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The Wassermann test, properly and carefully performed, is a most valuable aid in the diagnosis and treatment of syphilis. Due to its complexity, however, workers have for a long time striven to perfect a simpler laboratory test for syphilis. The precipitation test for syphilis worked out by Dr. R. L. Kahn of the Bureau of Laboratories of the Michigan Department of Health seemingly answers the requirements. The remarkable specificity and accuracy of this test have been the subject of favorable comment both by clinicians and by laboratory workers. The test is being adopted by laboratories as a routine test for syphilis. According to Young[1] the Kahn test is employed as a routine test in the Michigan Department of Health, the Michigan State Psychopathic Hospital, the Missouri State Board of Health Laboratory, the Duemling Clinic, Fort Wayne, Indiana, the Wassermann Laboratory of Washington University, St. Louis, the Kansas State Board of Health Laboratory, and the Toronto General Hospital. This test is also used in the Laboratory of the Massachusetts Department of Health as a check on specimens of serum which are hemolytic.[2]

KAHN TEST APPROVED BY PHYSICIANS

The writer inaugurated the use of the routine Kahn test in the Laboratory of the Kansas State Board of Health after a preliminary study[3] had convinced him of the value of this test as a check upon the Wassermann test. For the past year the Kahn test has been performed routinely on all blood specimens which have been submitted to the Laboratory of the Oregon State Board of Health. The results of the Kahn test have been reported to the physicians along with the results of the Wassermann test. That the majority of the physicians appreciate the importance of the Kahn test is indicated by the replies received to the following question submitted by the laboratory: "Do you take into consideration our findings with the Kahn test on the blood specimens sent in by you for the Wassermann test?" Of fifty replies 33 stated that they did take the Kahn test into consideration; 9 stated they did not; and 8 stated they did not take the Kahn test into consideration either because they knew nothing about it or else they had no chance to make a favorable comparison with the Wassermann test.

THE WASSERMANN TEST

The Wassermann test employed at the Laboratory of the Oregon State Board of Health is essentially that recommended by the United States Public Health Service. The antigens used are a cholesterinized (0.4 per cent) beef-heart alcohol extract, and the Kolmer[4] antigen. Water-bath incubation is used with the former, and ice-box incubation over night with the latter antigen. The sheep system, with two units of complement and two units of amboceptor, is used in the performance of the test.

THE KAHN TEST

The Kahn test employed in this laboratory is that known as the "earlier"[5] procedure. Recently Kahn[6-7], modified his precipitation test so that he not only claims a higher degree of specificity and a much closer agreement with the Wassermann test, but he also states that it has the additional advantage of being quantitative to a limited degree. The earlier and present procedures both depend upon the phenomenon that when the serum of a syphilitic patient is brought in contact with the Kahn antigen and shaken, a precipitate results—the amount of precipitation depending upon the amount of syphilitic antibodies present in the serum. The antigen used in this laboratory for the performance of the Kahn test was prepared from Bacto beef heart, dehydrated. The antigen used by the writer while in Kansas was from the powdered muscle from four beef hearts; this antigen was not so sensitive as that prepared from the Bacto beef heart. Since, as in the Wassermann test, the accuracy of the results depends so largely upon the sensitiveness of the antigen employed, it can readily be seen that there may be disagreements in the findings of the Kahn test in the hands of different workers.

The actual performance of the Kahn test is very simple. Three parts of physiological saline are added rapidly to one part of the Kahn antigen and mixed thoroughly. An opalescent solution results. 0.05cc. of this diluted antigen is added to 0.3cc. of the patient's serum (inactivated at 55° C. for thirty minutes); the tube is shaken vigorously for a few minutes and then allowed to incubate over night at 37° C. In a negative serum no precipitation will occur. In syphilitic serums the amount of precipitation will vary from very small particles to very large clumps, depending upon whether the serum is weakly or strongly positive. The positive results are read on the basis of one, two, three, or four plus. While the results were so read and recorded, they were sent out to the physicians as negative, doubtful, or positive.

In the recent Kahn procedure "the test consists of three tubes, each containing different proportions of serum and antigen dilution. The final result is the average of the precipitation findings in the three tubes, and is expressed in plus signs."[7] By the recent procedure the results may be read within twenty minutes at the most. With the earlier procedure a much longer incubation period is necessary.

COMPARATIVE KAHN AND WASSERMAN RESULTS

In the past year there were run in this laboratory Kahn and Wassermann tests on 2542 blood specimens. These specimens were submitted by physicians and by institutions. Data accompanying many of these specimens were either meagre or entirely lacking; hence it is impossible to tell how many were submitted for diagnosis and how many as controls for treatment. An effort was made to get the history of every case where there was a complete disagreement between the Kahn and the Wassermann tests. In 73 out of 139 such cases the histories were obtained. The results obtained with the parallel tests are given in Table 1.

TABLE 1.

Comparative Kahn and Wassermann Results on 2542 Blood Specimens

Kahn Test	Wassermann Test Positive	Doubtful	Negative	Total
Positive	452	38	17	507
Doubtful	21	69	57	147
Negative	4	61	1823	1888
Total	477	168	1897	2542

There was complete agreement in 2344 (92.2 per cent) tests; fair agreement in 59 (2.3 per cent) tests; and complete disagreement in 139 (5.5 per cent) tests. In other words, the Kahn test agreed with the Wassermann test in 94.5 per cent and disagreed in 5.5 per cent. Four strongly positive Wassermann reacting serums gave negative results with the Kahn test, while 17 strongly positive Kahn reacting serums gave negative results with the Wassermann test.

DISAGREEMENT IN TREATED CASES

A study of the available histories showed that the disagreement between the Kahn and Wassermann tests was most marked in treated cases. In two cases of untreated congenital syphilis the Kahn test was positive and the Wassermann test negative.

TABLE 2.

Comparative Disagreement Between the Kahn and Wassermann Tests in 71 Treated Cases

Kahn Test	Wassermann Test Positive	Doubtful	Negative	Total
Positive	0	17	9	26
Doubtful	12	0	17	29
Negative	0	16	0	16
Total	12	33	26	71

These results clearly indicate that in the 71 treated cases, showing marked disagreement between the two tests, the Kahn test was more sensitive than the Wassermann test. Of 55 Kahn reacting serums 26 were negative by the Wassermann test, while of 45 Wassermann reacting serums 16 were negative by the Kahn test. Many of these disagreements occurred among patients who were under continuous and vigorous treatment at the Portland Free Dispensary. There were, of course, numerous treated cases which gave agreement with both tests; the exact number, however, could not be determined.

The Kolmer antigen, perhaps the most sensitive and reliable antigen for the Wassermann test, has been, in our hands, the main reason for the disagreement between the Kahn and Wassermann tests in treated cases. This is well illustrated in the case of P. R., a patient at the Portland Free Dispensary.

On March 26, 1922, P. R. was admitted to the dispensary for syphilis; his blood test, according to his record, was positive. After a course of seven 0.9gms. neosalversan injections and mercury rubs the blood serum gave, on June 11, 1922, a negative reaction with an acetone-insoluble antigen, and two plus with a cholesterin antigen. Another course of neosalversan (6—0.9gms.) and rubs followed, and on November 7, 1922, his Wassermann test was yet 2 plus with the cholesterin antigen and negative with the acetone-insoluble antigen. On January 26, 1923, following six more neosalversan injections, his blood serum was negative with the acetone-insoluble antigen and 4 plus with the cholesterin antigen. From then on until September 15, 1924, he was under varied anti-syphilitic treatment with occasional rests. During that time the Wassermann and Kahn tests gave the following results:

Date	Kahn Test	Wassermann Test Cholesterin	Kolmer
May 23, 1923	None Made	Negative	Not Made (acetone negative)
September 11, 1923	None Made	2 plus	2 plus
December 22, 1923	Negative	Negative	4 plus
March 22, 1924	Negative	Negative	4 plus
June 10, 1924	Negative	Negative	4 plus
September 15, 1924	Negative	Negative	4 plus

The treated patient who is Wassermann negative and Kahn positive is illustrated by the following case history, submitted by a physician:

"Mr. J. is a case of long standing, chancre, March, 1917. Secondary, June, 1917. Acute syphilitic nephritis. Negative Wassermann tests between June, 1919, when referred to me until November 28, 1923. Then due to nephritis I began with small neo injections and worked up as follows: 0.2, 0.3, 0.4, 0.6, 0.6, 0.6, 0.9, 0.9, 0.9, 0.9, 0.9 at weekly intervals, and six weeks of mercury rubs, and then ine month's rest. The Wassermann test on March 26, 1924, was negative, the Kahn test was positive. Three neos, 0.6, 0.9, 0.9, and a course of mercury by another doctor followed. On May 1, 1924, his Wassermann test was negative and the Kahn test doubtful."

PRIMARY SYPHILIS

The opportunity was offered to compare the two tests in the primary stage of syphilis. Forty-seven patients with suspicious lesions were examined both by the darkifield and by the Kahn and Wassermann tests. As was expected the darkifield examination revealed luetic infection much earlier than the serologic tests. There was very good agreement, however, between the Kahn and the Wassermann tests. Of the 47 patients examined, 11 gave both strong positive Kahn and Wassermann tests; four gave a doubtful reaction with the Wassermann test as against three negative and one doubtful reaction with the Kahn test. One of those that gave a doubtful Wassermann and a negative Kahn was later proven to be non-syphilitic.

TABLE 3.

Comparative Results of the Darkfield Examination, the Kahn Test and the Wassermann Test In Primary Syphilis

Treponema	Pallida	Kahn Test			Wasserman Test		
Pos.	Neg.	Pos.	Doubt.	Neg.	Pos.	Doubt.	Neg.
7	....	7	....	....	7	....	....
2	....	....	....	2	1	1	....
11	....	....	1	10	....	....	11
....	27	4	....	23	3	3	21
Total. 20	27	11	1	35	11	4	32

The serologic tests used as a comparison with the darkfield examination were made on blood specimens obtained by venipuncture. Elliott and Todd[8] were able to get positive Kahn tests in many patients with suspicious lesions by using a micro (slide) Kahn test. According to these workers the substance reacting in the Kahn test appears early in the local lesion and is present before the blood becomes positive in the Kahn and in the Wassermann tests. Thus they obtained micro Kahn tests in 21 of 23 chancres, in 7 cases of ulcus mixte, in 2 chancroidal cases, and in one of bubo in a syphilitic patient. They obtained negative micro Kahn tests in 10 chancroidal cases, in 2 cases clinically diagnosed ulcus mixte, which subsequently proved to be chancroids, and in 1 case each of herpes progenitalis, scabies, and traumatic ulcer, and in 2 cases of balanitis erosiva.

FINDINGS OF OTHER WORKERS

A study of the literature indicates that the Kahn test checks closely the results obtained with the Wassermann test. Table 4 shows the comparative results obtained by various workers with the Kahn and Wassermann tests. With several exceptions, which are indicated, all the Kahn tests were performed by the earlier procedure. (See Table 4, page 546.)

VALUE OF TEST

In the hands of the originator the Kahn test gives as complete agreement with the Wassermann test as it is possible to get with such variable factors as enter into serologic reactions. From one viewpoint it may be regarded as unfair to estimate the value of one variable from its relationship to another variable. The Wassermann test, correctly performed, has, however, been accepted by the medical profession as the standard laboratory guide in the diagnosis and treatment of syphilis. Any test designed to replace the standard test must at least be as accurate. The value of any laboratory test rests ultimately upon the relationship it bears to the symptoms and clinical findings. It is unfortunate that very many specimens submitted to this, as well as to other public health laboratories, are devoid of any information pertaining to the symptoms, clinical diagnosis, and other data pertinent to an intelligent interpretation of the laboratory findings. It is this lack of contact with the patient that makes it so difficult to evaluate the findings of many tests made by the public health laboratory. When a test, therefore, has been studied by clinicians and found by them to correlate with their clinical findings, it must be given serious consideration by the laboratory wirkers. If such test combines simplicity, specificity, and accuracy, and it lies within the domain of public health, it should be adopted as a routine test. The Kahn precipitation test for syphilis has been given serious study by clinicians as well as by laboratory workers. It is exceedingly simple in its performance. It is highly specific, as shown by Fox and Sanderson[13], who found that it did not give a positive reaction in non-syphilitic women during pregnancy, in diabetic patients, or in cases during the course of in-

TABLE 4.

Comparative Results of the Kahn and Wassermann Tests as Reported by Various Workers.

Name of Author	Number of Tests	Absolute Agreement* %	Comparative Agreement %	Disagreement %	Remarks
Anderson, J. F. and Fischer, E. E. (9)	329	92.4	....	7.6	In 91 cases under treatment with arsphenamine, there was an agreement in 80.2%; in 238 new admissions, agreement 97%.
Babonneix, L., Boucher, R., and Choay, M. (10)	100	71.0	4.0	25.0	Used 0.3 cc. antigen and 0.6 cc. serum. 63 neg. Wassermann gave 18 Kahn reactions.
Detweiler, H. K. (11)	1540	94.2	......	5.8	51 Pos. Wass., Kahn Neg. 39 Pos. Kahn, Wass. Neg.
Dulaney, A. D. (12)	900	87.8	....	12.2	
Fox, J. C., and Sanderson, E. S. (13)	1000 (915 patients)	89.6	....	10.0	Disagreement in favor of Kahn, 5.2% disagreement in favor of Wass., 4.8%; disagreement, unsatisfactory, both tests, 0.4%.
Grant, M. S. (14)	175	94.3	....	5.7	In 5 cases Kahn more sensitive than Wassermann.
Havens, Leon C. and Taylor, Margaret L. (15)	1395	90.3	2.4	7.3	Widest disagreement in 69 treated cases.
Herrold, R. L. (16)	244	95.5	....	4.5	Used Ring or Contact Precipitation method.
Holmes, Janet A. (17)	1000	90.4	....	9.6	
Kahn, R. L. (18)	43030	94.17	5.08	0.75	Earlier Procedure.
	58170	97.64	2.15	0.21	Present Procedure.
Keim, H. L. and Wile, U. J. (19)	157	98.1	....	1.9	Non-syphilitic control.
	80	60.0	16.3	23.7	Latent.
	12	66.7	....	33.3	Primary (Disagreement in favor of Kahn test).
	15	53.3	....	46.7	Secondary.
Levin, Wm. (3)	258	86.4	12.8	0.8	
Moody, W. B. (20)	1500	98.0	....	2.0	Used Herrold's Ring test method.
Moon, V. H. (21)	528	91.5	2.9	5.5	Used Herrold's Ring test method.
Sobei, Ide and Smith, Geo. J. (22)	2165	98.7	....	1.3	

*Some workers did not differentiate between absolute and comparative agreements.

fectious diseases; and, as also shown by Yagle and Kolmer[23], who found that the Kahn test did not give false reactions in leprosy. It is remarkably accurate as shown not only by the Wassermann test controls, but also, and which is of greater importance, by clinical experience.

The cooperation of the physicians should be fully extended to all laboratories engaged in medical work, particularly in furnishing information with all specimens submitted for examination. With such information available the laboratory worker can more easily interpret his findings and pass critical judgment upon the value of any test. There is every reason to believe that the precipitation test for syphilis will ultimately replace the Wassermann test both as an aid in diagnosis and in treatment. In its present state the Kahn test should be used only as an additional guide and as a check upon the Wassermann test. Moreover, the results with the Kahn test upon spinal fluids, as reported by many workers, have been rather unsatisfactory. Kahn now uses a modified technic for spinal fluids, the results of which he claims "appear to conform with the findings of a conservative Wassermann test." Our experience with the Kahn test on spinal fluids, while rather limited, does not warrant its adoption as a routine test.

CONCLUSIONS

1. Parallel Kahn and Wassermann tests made on 2542 blood specimens submitted to the Oregon State Board of Health Laboratory showed complete

agreement in 92.2 per cent, fair agreement in 2.3 per cent, and complete disagreement in 5.5 per cent.

2. The Kahn test was more sensitive than the Wassermann test in 71 treated cases for which complete data was available. In this series 55 Kahn reacting tests gave 26 negative Wassermann tests, while 45 Wassermann reacting tests gave 16 negative Kahn tests.

3. In primary syphilis the Kahn test became positive practically at the same time as the Wassermann test.

4. Because of its simplicity, specifically, and high degree of accuracy the Kahn precipitation test should be adopted as a routine test in the diagnosis and treatment of syphilis, and should be supplementary to the Wassermann test.

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CURES, CULTS, FADS AND QUACKS*

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(Concluded from November Number)

THE GULLIBILITY OF THE PUBLIC

Education of the public would at first thought seem to be a solution for all these misconceptions in regard to cures, but unfortunately, humanity has a tendency to believe what it wants to believe, whether true or false. This fact was clearly set forth in the report of Harry T. Brundidge, a reporter for the St. Louis Star. He recently became a doctor in five weeks through a quack diploma mill in Kansas City. In his course he learned much practical psychology, if not much medicine. He states that people are inclined to have great faith in certain things merely because they like those things, and that they openly avow that certain things are true when, in fact, they only hope they are true. This mental tendency accounts for the ready market for fake oil stock, just as it accounts for the presence of thousands of fake doctors. Advertise a guarantee to cure any chronic disease, with the slogan attached, "no money until cured," and your office will be crowded, for chronic sufferers are ever on the alert for news of a new healer. They are not interested in methods, they want relief from suffering. Quacks know this and profit by it.

This wish to believe has led people to accept a whole seething mass of untruths. Nor is the tendency restricted only to the healing of disease. When "Hell, Maria" Dawes returned from Europe he stated, with reference to the European politicians, that the quack doctors had been telling them pleasant things in accord with their passions, prejudices, and nationalistic sentiments, rather than the truth which they needed so badly.

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Persons whose ailments are largely imaginative become the easy victims of these charlatans, and are soon their walking advertisements. As a typical occurrence, take Mrs. Smith, who thinks she is ill. The family doctor examines her, gives her a tonic, and knowing that there is nothing wrong, dismisses her. Mrs. Smith resents this. She hears of a new doctor and calls on him. Yes, her condition is critical. Thank heaven! she reached the office in time. The new doctor soon cures her, and then she goes out on the highways and into the homes of her friends to sing his praises.

Another amusing, yet serious fact, is that people discriminate as to what they put into their stomachs, but they are not so particular as to the kind of mental fodder they allow to enter their minds. Most people will not eat food that is the least bit suspicious or doubtful, but if told that the hair on a rabbit's foot harbors a germ which a noted scientist has proven to be an absolute prevention for influenza and rheumatism, many people would join the chorus, "Well, well, isn't that wonderful! I must tell the neighbors!"

Thus, without thought we turn from one craze to another. We wish to pass personal responsibility, "pass the buck" as it were, to some one else for all our misfortunes. It is our desire for something that suits our sentiments or gives us an excuse to escape reality that welcomes nonsense into our minds. And it is this demand that creates silly fads. For example, certain medical and surgical treatment is of necessity unpleasant, so we have drugless and knifeless cures and cults.

Associated with the wish to believe, there is another factor in modern life that promotes gullibility. We are getting out of the habit of thinking for ourselves. We are developing the sheep type of mind. In the old pioneer days men and women had to think for themselves. They had to weigh facts; they had to distinguish nonsense from that which was worth while. They developed, thereby, a sense of relative values. But now the art of living has so speeded up that there is no time to think. Everything we read we believe. It is the easy way. Even our system of education has fostered this habit of accepting everything we study as true.

A BRIEF ANALYSIS OF PRESENT-DAY CURES AND CULTS

In studying the various methods of all so-called cures and cults of today, one is immediately impressed by the similarity of their mode of operation. Nearly all their results depend upon mental suggestion or mental re-education. In all their methods, physical treatment is regarded as absurd, with the exception of occasional useful massage, applied in some methods, and even this is used merely to emphasize the mental effect.

In regard to Christian Science, I have never seen a more comprehensive, or more terse statement than that made by William Mayo in February of nineteen twenty-one. At that time in his address at Cleveland he stated: "Christian Science has capitalized and commercialized the mental healing virtues of Christianity. Among all peoples in all times the prevailing religion has been successful in relieving sickness so far as mental suggestion could give comfort or indirectly affect the physical condition. * * * Christian Science, while wholly devoid of science, at least brings the comfort of religion to bear on a great number of human misfortunes. If Christian Science would confine itself to the mental and functional disturbances of man, it might do more good and less harm." And so Dr. Mayo dismisses the subject. However, it is unquestionable that much gratitude is due Mrs. Eddy in that she has shown us that we need not be afraid of fear; for half of man's activities are devoted to taking precautions against fear—fear of sickness and death, fear of sorrow and want, fear of man's inhumanity to man.

Osteopathy comes under the type of cures which depend upon mental suggestion, enhanced by more or less valuable mechanical practices. It might be called "glorified massage." One is not inclined to quarrel with the method of osteopathy, in so far as it is a valuable adjunct in the healing science. The quarrel would be with the muddy, unscientific explanation of its art and the insistence that this one method can cure all diseases and conditions. There are several reasons why osteopathy cannot be accepted as a cure-all by a logical or scientific mind. In the first place thousands of autopsies in which the spinal column has been carefully examined have never shown a basis for the contentions of osteopathy. In Potts disease, where slips, sublaxations, and dislocations of all kinds appear in the spinal column we should have a patient with everything from typhoid fever to ingrown toe nails. But have we not all seen perfectly healthy hunchbacks, whose spinal column has been deformed by tuberculosis?

Another inconsistency in this method of healing is that its application is restricted. The horse, the cow, and the dog are vertebrates the same as man, and are heir to many of the same diseases.

Should not a conscientious osteopath or chiropractor be warned never to ride horseback for fear of causing an impingement or subluxation of the poor animal's spinal column? Many of the same scientific, medical, and surgical procedures used on man are used successfully on animals by the veterinarian. Then why is it not right to demand of the cults that, if all their assertions are correct, they cure some of the other vertebrates, not limiting their cures to man. Why neglect this field? Perhaps it is because the animal does not worry himself sick, and so is not open to mental suggestion.

Of chiropractic, William Mayo once said, "Poor osteopathy: Chiropractic has stepped in and taken the spine out of osteopathy. Every man knows that he has a spine, but it is behind him, he cannot see it, and therefore he cannot get those enlightening comparisons open to most patients of osteopathy. Chiropractic does less good perhaps than osteopathy, but it has a better alibi, with a shrewder conception of the possibilities of concealment of the absurd."

Before leaving this class of cults allow me to read Dr. Still's words which he used when he wished to stir his students: "Let your light so shine before men that the world will know you are an osteopath pure and simple, and that no prouder title can follow a human name. Stand by the old flag of osteopathy, on whose fluttering folds are emblazoned in letters of glittering gold: One Science, One Lord, One Faith, and One Baptism."

The sucker machine is based on the electronic theory. It is too absurd to bear mention even. It belongs to the pseudo-scientific class of cures, and has not even the saving grace of partial truth.

Spiritistic healing has at present Sir Conan Doyle as its most noted exponent. It is not hard to understand that those who believe in the power of a medium to communicate with another world would easily be convinced that such a person might procure from the departed wonderful secrets of healing. Therefore spirit rapping mediums find healing a very lucrative side line.

Psychoanalysis and Coueism are some of our newest fads, and so of special interest. Psychoanalysis finds all of our neurotic ills in sex repression, while Coueism attributes all our ailments, both physical and neurotic, to our lack of self confidence. The psychoanalyst claims that he removes a repression complex and cures his patient. Mr. Coue maintains that he does not cure his patients but teaches them to cure themselves. For success each method depends upon the release of repressions or inhibitions. Coue, however, has the simpler method. He does not ask his patient to spend hours in muck raking for sex insults, but he assures him that if he has faith that he is better, then he will be better. The assumption of the psychoanalyst is not always true. We all know people who have practiced sex repression from early youth who are not neurotics in the least. On the other hand, it does not take much of an aggravation to produce a neurotic out of a person who has been a spoiled child, and who has not been brought up to meet the vicissitudes of life, or out of one who was born with an unstable nervous and mental make-up. The cures of both are wrought by mental re-education, a change of mental attitude.

Dr. Dercum of Philadelphia, the noted neurologist, states briefly: "Psychoanalysis is an outcome of the general mystic tendency of the modern world. Acceptance of it is a matter of faith, not reasoning, and so it is a cult, a creed, the disciples of which constitute a sect." Eight years ago Dr. Dercum said in closing an address, "The prophecy can with safety be ventured that psychoanalysis will in due course be a matter of history and will pass away. It will then take its place side by side with the other mystic practices, such as animal magnetism, mesmerism, hypnotism, metallotherapy, Perkinism, Eddyism, divine healing, new thought, and other procedures that have time and again swept the earth in epidemic form."

WHAT CAN THE HONEST PHYSICIAN DO AND LEARN FROM ALL THIS?

It is evident from all these facts that so-called cures will continue to flourish as long as people remain gullible and accept with unquestioning minds that which by fact and logic is absurd. Education is a supposed cure for many ills, but education cannot guarantee logical cerebration. It is so much easier to accept what we hear than it is to separate the chaff from the wheat. I agree with Dr. Mayo, who, three years ago in discussing the future of medicine, wondered how the medical profession could teach the public about the relationship of the nervous system, not only to disease but also to unhappiness in all forms, resulting from all causes, when our own knowledge of all nervous conditions not proven to be of physical origin, is so slight. We do know, however, that the ailments of humanity are functional and organic. Also we know that we can help and cure many organic diseases which the quacks do not and cannot. The public is becoming more and more aware of this fact, and all that remains in this field is to evolve to greater heights. This we are doing in the unfolding of our science.

But how about our art, our psychology? I do not wholly agree with Dr. Irvin Arthur of Patoka, Indiana, whose article in the Journal of the Indiana State Medical Association was commented upon in a recent number of The Literary Digest. He states that there is too much physical science in our medical training today and not enough psychology. I agree with him that there is not enough psychology, but we can never have too much medical training.

George Van Ness Dearborn states: "Although the power of suggestion has been recognized from the earliest human times, and the powerful influence of mind on the body somewhat understood for centuries, the medical schools obviously have in general belied their high privilege of first studying and then teaching the relations and mutual dependence of body and mind. They have neglected their psychology." Perhaps our keen interest in our science has made us neglect our art.

It is time that physicians recognized the fact that encouragement must be given in neurosis. An apt expression of this idea is: "The patient who can lift his eyes to the future will recover; he whose thoughts writhe in the past is on the road to lunacy." We must remember that society is fundamentally governed by emotion, and that emotion is created by self interest, which in turn is stimulated by misery. Misery may be entirely mental, but it should not be slighted. It is hopelessly credulous and never intellectual or analytical. When outraged by a doctor who is blunt and not artful, misery makes a fine opportunity for the quack. The mental aspect of the patient's disorder should be as diligently served as that which is physical. Physicians often experience difficulty in helping patients who indicate a lack of confidence in them, for such patients do not have the mental relaxation which is so essential to the most efficient operation of the natural recuperative processes. Since so much depends upon the correct mental relationship between the patient and the doctor we should be most cautious of unjustly condemning a fellow practitioner, thereby destroying individual and public confidence.

Many people react mentally to the large clinics as to the shrines of old. Reputation inspires faith. and faith and science work wonders. Every physician knows that regular medicine can give every real advantage offered by the special cult, and more. One can be advised by a physician as to diet, water drinking, and exercise, and even as to faith or religion or attitude of mind.

The physician should bear in mind that if a mental state has caused a disorder, anything that will remove that mental state will cure it. It may be a philosophy, a cult, or a fad, but if one have faith in it, it will cure the mentally induced disorders. It is faith, however, that works the cure, not the thing to which one happens to pin his faith. Therefore, we must keep the faith and confidence of the public in our profession and in ourselves, if we desire to help humanity most efficiently.

My only hope in this paper is that it may stimulate us to study the art of medicine as ardently as we study the science of medicine. With Dr. S. Wier Mitchell of Philadelphia, let us say: "If the physician does not intellectually respect the complex matters of the soul and their interdependence, he is unfit for higher seats in the temple of healing."

X-RAY TREATMENT OF TOXIC GOITER*

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In the treatment of the thyroid disease it is necessary to classify the different diseased conditions affecting the gland in order to select the cases suitable for the various forms of treatment. We have found it useful to classify all thyroid diseases as toxic and non toxic. The non toxic cases are not an x-ray problem and do not concern us in this presentation. The toxic cases can be divided into simple hyperthyroidism and exophtholmic goiter. Simple hyperthyroidism is often associated with adenomatous changes, the symptoms being due to an increased quantity of thyroxin. Exophthalmic goiter is accompanied by a general hyperplasia of the gland and according to some authorities an alteration in the character of the thyroxin produced. Adenomata and a general hyperplasia are often associated in the same patient and exophthalmic symptoms may appear in a patient who has an adenoma of long standing. The work of Plummer and Kendall, published in the Mayo Clinic, 1921, has added much to our knowledge of the functional pathology of the thyroid. They state that the essential function of the thyroid is the formation and delivery to the body of thyroxin. Thyroxin is defined as an iodine compound which is necessary to the proper functioning of the body mechanism. It has been demonstrated that the intravenous injection of large doses of thyroxin will be followed by the symptoms that accompany simple hyperthyroidism. The symptoms caused by an injection usually persist for some time; 5 to 9 weeks being required for the individual to return to normal. My own observation on patients treated with x-rays has been that improvement is usually not manifest until 4 to 6 weeks after starting treatment.

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*Read before the Forty-sixth Annual Meeting of Montana State Medical Association, Helena, Mont., July 9-10, 1924.

The action of x-rays on glandular tissue is well known. Large doses applied over the salivary glands result in dryness of the mouth. This condition persists for a time after which there is a return to normal. If repeated doses are applied a permanent diminution in the secretion will occur. The permanent changes in ovarian secretion that follow intensive irradiation of the female pelvis have long been recognized. Knowing that the symptoms of hyperthyroidism are due to an abnormal activity of the thyroid gland and that the x-rays have a very powerful depressant action on glandular activity, we have a very rational and scientific basis for the use of radiation in the treatment of this condition. During the past 4 years I have had an opportunity to study and treat about 70 cases of hyperthyroidism. In this series there were 15 males and 55 females. The ages range from 17 to 62, the average age being about 40. The duration of symptoms varied. One patient had had symptoms for about 20 years. Many applied for treatment after being ill only a few months. The basal metabolism rate before starting treatment ranged from 30 to 110 per cent plus; the average being 56 per cent plus. The pulse rate ranged from 80 to 140. Many of these patients had lost a great deal of weight, 40 to 50 pounds loss in 2 to 3 months time being not uncommon. The largest loss of weight was 100 pounds in a man weighing 260 pounds at the onset of the disease. Weakness and shortness of breath on exertion was present in the majority of cases. Several patients complained of pain in the side that appeared to be associated with fatigue and did not disappear until a complete cure had been established.

The first essential for the effective treatment of any condition is an accurate diagnosis. This is particularly true in toxic goiter. In many cases the diagnosis is comparatively easy but it is often difficult to recognize some of the atypical cases which present only a moderate elevation in the basal rate. A careful clinical history should be taken in every case and routine laboratory tests performed. We have found the estimation of the basal metabolism rate of great value in the diagnosis and treatment of this disease. The cases, in which the diagnosis is established early and treatment promptly instituted, give the best results. The damage done to the heart by long standing hyperthyroidism may be beyond repair. If we can diagnose the condition and treat our patient before this occurs we will obtain a complete return of health. In the long standing cases this cannot always be promised. One of my patients, Mr. E. had had his hyperthyroidism for at least one and one-half years when he came to me. He was 50 years of age and had always been well until the onset of the present illness. He had had a double ligation performed at the Mayo Clinic 9 months before I saw him. Three months after this he returned to the Clinic but was advised not to have a thyroidectomy at that time on account of his poor general condition. His symptoms progressed with increasing weakness and loss of weight. On August 18, 1921, his condition was as follows: pulse, 120, very irregular; B.P., 170-80; weight, 125; normal weight, 180; basal rate 95 per cent plus; marked tremor; enlarged thyroid and exophthalmos. Signs of cardiac decompensation were present. Three courses of x-ray treatment were given during the following 6 weeks.

At this time his basal rate was 55 per cent plus and he was improving. At the end of 5 months he had gained 25 pounds and was feeling much better. There is some slight cardiac weakness at present, otherwise the patient has fully recovered. Basal rate plus 20; pulse normal; weight 170; Thyroid enlargement and exophthalmos have disappeared. This patient after being pronounced inoperable by very competent authority made a very satisfactory recovery under x-ray treatment.

Mrs. N., age 47, gave history of having had a thyroidectomy performed about 3 months prior to our observations. The operation had been performed by one of the leading surgeons on the coast. She had not made a complete recovery, her basal rate being 39 per cent plus and her pulse elevated. She had been advised by her surgeon not to expect a complete restoration of health until after 12 months had elapsed, so we advised her to wait. At the expiration of the year she came back. At this time her basal rate was the same. All her symptoms were still present. This patient made a complete recovery after 3 courses of x-ray treatment.

It is a common occurrence to have patients apply for treatment of an enlarged thyroid who have no symptoms of intoxication. Patients of this type having a normal basal rate are not treated with x-rays. Cases showing a general hyperplasis and moderate elevation of their basal rate will get complete relief of their enlarged thyroid after a few x-ray treatments.

Mr. T., age 35, consulted me because of an enlargement of his thyroid. His general health was good. He had no complaint except the enlarged gland. Basal rate however was 38 per cent plus; pulse 90; B.P. 140 systolic. There was a complete involution of the gland following x-ray. His basal rate and pulse also became normal. A moderate increase in weight followed. His general health is excellent.

Mrs. G. was one of my early cases. She was 38 years of age and had had an enlarged thyroid for many years. Recently she had become nervous and lost some weight. On March 5, 1921, her pulse was 110; basal rate 60 per cent plus; x-ray treatment was given on this date. June 4: Pulse 80; basal rate 40 per cent plus; x-ray treatment repeated. July 7: Pulse 74; basal rate plus 22 per cent; x-ray treatment repeated. August 18: Pulse 60; basal rate 18 per cent plus. In November the basal rate was normal. This patient has been kept under observation and has had no further trouble.

Our technic used in the treatment of these cases has been 9 inches spark gap; 5 ma. of current; 8 inches target skin distance. Filter 6 mm. of al and sole leather. About three-fourths of an erythema dose is given over 4 areas, treating right and left lobes thymus and an additional exposure from the back. The vocal cords should be protected with a small piece of lead, or hoarseness and even loss of speech may result. Improvement is usually not evident until after 4 to 6 weeks have elapsed. The majority of cases show a pronounced improvement shortly after the second course, which is given 3 weeks after the first. Three courses of treatment suffice for the average. A few require 5 or 6.

The results of treatment in my series are as follows: In 42 cases where an accurate check has been possible the average basal metabolism rate, at the time treatment was started, was 59 per cent plus. At the time treatment was discontinued it was 13 per cent plus, practically within the limits of normal. The other symptoms have improved along with the fall in the basal metabolism. Of the whole series, in 36 cases the end result may be considered excellent, that is a complete control of all symptoms and return of good health. The results in 27 cases can be considered good in that the hyperthyroidism has been controlled but there is some remaining weakness of the heart or some other factor, due to the long duration that prevents a complete return of health. In 7 cases the results are only fair. Four of them have been quite well but at the last observations were still hyperthyroid. Three were operated upon, 2 cases having adenomas, with success. One case of the exophthalmic type died, following a ligation after having made a pronounced improvement under radiation.

Many patients require medical care in addition to the x-ray. Rest and the use of sedatives are necessary in the more severe cases. Recently I have been using Lugols solution to control the symptoms in the acutely ill cases with very good results. Focal infections are best dealt with after the patient begins to improve. We usually wait until the pulse and basal rate are nearly normal. This is a very important part of the treatment as many patients fail to gain strength until after the removal of diseased tonsils or abscessed teeth.

SUMMARY

1. X-ray is a very efficient means of controlling hyperthyroidism.
2. The results are at least as certain and permanent as those obtained by other methods.
3. There is no pain, no scar and no mortality connected with this treatment.

OSTEOGENESIS IMPERFECTA

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History.

Osteogenesis imperfecta was first mentioned by Vrolik in 1849, although a somewhat relating condition had been described by Lobstein in 1833. The latter, however, in describing his particular cases of bone fragility, evidently had in mind the hereditary or familial type, having discovered in his series that this peculiar condition arose in as many as four successive generations, he named it osteopsathyrosis, which means merely bone fragility.

Fragilitas ossium, another condition very similar to the two mentioned above, also has the element of heredity and one can see from its name that it is practically the same as osteopsathyrosis. Authors differ very greatly in their diagnosis and definition of these three diseases, if they may be called three distinct conditions. Osteogenesis imperfecta really appears to cover all of the idiopathic varieties, since it is a term descriptive of the process of bone development gone wrong, and, especially when it is divided into two heads; osteogenesis imperfecta congenita, and osteogenesis imperfecta retarda, a related or identical condition latent till adolescent or adult life.

We are not interested at all with the conditions of fragile bones occurring in the adult or aged, arising from known conditions, such as carcinoma, lues, etc., but rather osteogenesis imprefecta as it is to be considered in this paper is a condition in which infants and children manifest multiple fractures of the long bones due to imperfect formation of bone substance, by both medullary and periosteal osteoblasts, the origin of which is wholly unknown.

Neither will osteogenesis imperfecta tarda be considered in this paper, but rather the congenital form, dating from uterine life to very early infancy.

Authors record instances wherein many fractures have been observed at birth and callus formations are discovered at the time of delivery of the child, the majority lying within a very short time, or else are stillborn. The number of bones fractured at birth vary a great deal from just a few, as in my own case, to as many as 113 as recorded by one author.

ETIOLOGY

Its etiology is wholly unknown. One author suggests that there must be a defective anlage during early fetal development. This theory is quite substantiated in those cases of fragilitas ossium appearing during adult life, generation after generation, as if that condition had been carried through the germ plasm of fetal life and apparently had lain dormant until its manifestation later in life. Therefore, is it not possible that the anlage of osteogenesis imperfecta congenita and osteogenesis imperfecta tarda are the same, the appearance of the defective bone process being merely a matter of time, occurring early or later in life? The fact that one sees rapid union in the infant and often none in the adult being due to the fact that all reparative processes in youth are at their best. The fact that its etiology is at times hereditary does not clear the situation. It is merely a recognition of a fact and the underlying explanation is questionable.

PATHOLOGY

Osteogenesis imperfecta has been described as periosteal dysplasia in which the medullary cavity is increased at the expense of the cortex. "Endochondral ossification is practically normal. The layer of periosteal osteoblasts is thick," according to Kauffmann, and, "instead of a continuous layer of dense laminated bone with stellate corpuscles and Haversian canals, plates of imperfectly laminated bone are formed with oval bone cells with no Haversian canals. Some bones show normal cartilage with normal preparatory calcification and normal line of ossification with normal osteoblasts. These, however, must function imperfectly since the lamellae of bone are exceedingly thin and delicate and periosteal bone formation is greatly reduced and many lamellae of the cortex are disconnected and run transversely." Marked callus formation is to be found by means of which a rapid and ample reparative process goes on.

REPORT OF CASE

Father, O. E. B. 32 years of age, R.R. freight clerk, weight about 130. Mother 26, weight about 220, primipara. Wassermann's negative, as was also the baby's later. Baby was born February 15, 1922, male, 7 lbs. Frank breech delivery, cord around neck once, a dry labor lasting 23 hours. At completion of labor the breech descended and delivery was made without traction. Arms were over the head but were gotten easily. It was observed immediately that both the right tibia and fibula were broken at the ankle. The family when notified, at once, unsolicited, exonerated me from any blame, realizing that no traction had been put upon the legs, consequently feared that the fractures had occurred before birth. A little later it was discovered that the right clavicle and left 7th and 8th ribs, mid axillary line, were also fractured. It was interesting to note that when the baby cried the diaphragmatic action bent the ribs inward to an exceedingly marked degree and this manifestation was the only one of the bending of bones seen in this case. The vault of the skull resembled the feel of a soft shelled egg for the most part, altho the anterior portion of the parietals and the frontal seemed normal. The leg injury united rapidly. The baby grew and did well.

On March 11, when three and a half weeks old, a slight swelling appeared on the upper part of left humerus. On March 12 and 13 it had increased in size becoming hard, indurated, purplish red in color, with dense mottled skin, with considerable local heat, very tender to manipulate, either to move limbs or to press upon callus. There was crepitation at the junction of the middle and lower third. He held his left arm limply at the side, the right also showing a similar swelling but not so far advanced. On March 15, on the left thigh was a swelling six and three-fourths inches in circumference, and on the right over the corresponding point, five and one fourth. The left thigh was thick, woody, smooth, and had a glossy appearance, felt like a large bone callus and crepitation was present. The baby lay with face to the right and this he continued to do for one to two months,

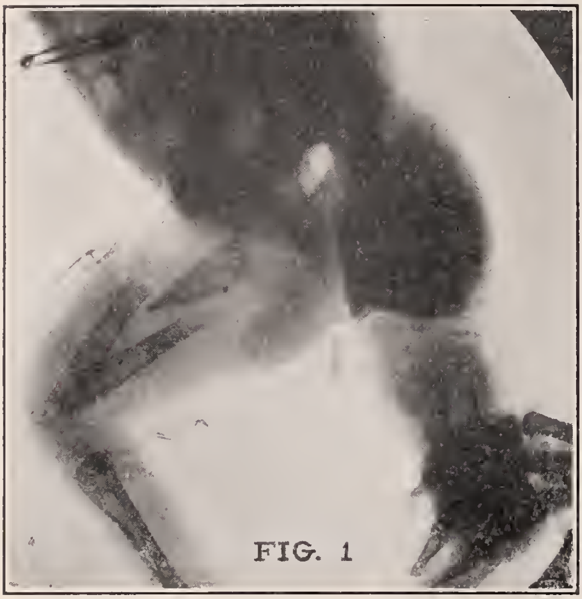


FIG. 1

(Left) (Right)
Fracture of left femur. Splint wrapped with adhesive plaster shows posteriorly.

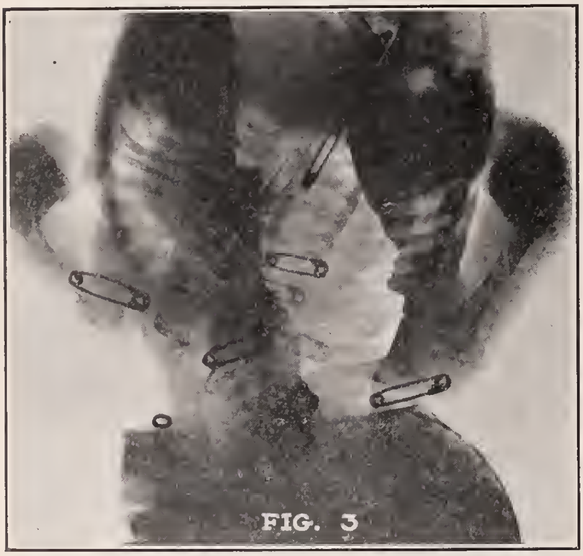


FIG. 3

(Right) (Left)
Fracture of left humerus and fracture and dislocation of right humerus.

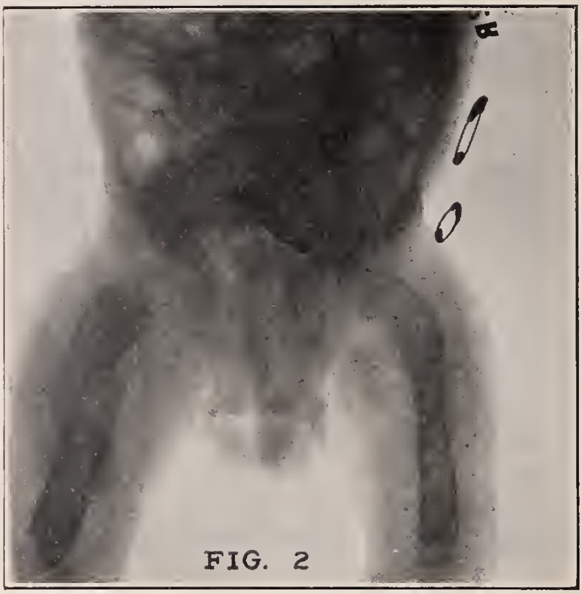


FIG. 2

(Left) (Right)
Fracture and calluses of left femur.

complaining more or less vehemently when he was turned forward or to the left, and in a short time his skull was flattened on the right side accordingly.

On March 23, right upper thigh looked quite suspicious.

On March 28, about six weeks after birth, islands of bone could be felt in the membranous portion of the skull.

April 4, the left thigh, also well up and over left fibula, there were swellings.

On April 19, the baby's abdomen was very distended. Also May 4, when he was seen this distension was present and he was quite distressed. The next day his left arm was swollen and his humerus again broken on inside of the callus.

On May 6, there was a swelling of the right wrist and left thigh. On May 21, the right humerus had developed a swelling but the bone was not broken. No crepitation could be discovered, and the arm was splinted.

June 5, his left thigh was swollen. Baby was vomiting and had temperature of 102 and bowel movements were grayish green in color.

On the 14 of June, there was a swelling at the head of the left tibia.

It was noticed that his hair over the occipital bone was dark colored and on the anterior portion of scalp was scanty, dry, straight and light in color. Also the sclerae of his eyes were blue and apparently so thin that the underlying choroid showed thru.

On June 15, he became quite fussy and held his right arm quietly at side.

June 16, there was a swelling to be found at the lower end of the right humerus, also one at upper end of right femur and upper third of left femur enlarged, the baby crying when it was moved.

It was to be noticed that none of the fractures were of the green stick type. The mother at this time also made the observation that the swellings frequently preceded the fractures, and almost always there was an intestinal upset and especially considerable abdominal distress the day before the swelling of a long bone appeared and a fracture was seen. It is a significant fact that frequently the baby would develop signs of intestinal distress with distensions and curdy grayish green stools. After the onset of which the mother constantly watched for a swelling of some long bone in the body, and nearly always she was rewarded. It was also rather interesting to note that frequently the callus appeared from one to two days before a fracture would occur, and sometimes by splinting the affected bone no fracture would occur, and within a week and a half to two weeks the callus would disappear. And again there would be clean cut fractures of a long bone without any previous callus formation, coming suddenly out of a clear sky, the callus formation being produced later.

From this time up to about the middle of November, 1922, the little lad had a history of intermittent fractures with callus formation and intestinal disturbance, so that almost at no time was he without a splint on some bone. The left thigh and each of the humeri were repeatedly broken, with of course, consequent shortening and at least partial deformity. It was interesting to note also that the knee articulations became so lax that the tibiae could be rotated from 30 to 45 degrees on their respective femora.

The last of November he began coughing. Rales and dullness were to be found in the upper left lobe behind. At this time a metatarsal was found swollen and also fractured. He developed a dry unproductive cough and rales were to be found thruout his right chest by the middle of December. In January he developed a typical broncho-pneumonia from which he finally recovered, leaving a chronic bronchitis. During this time he was still fracturing his thighs and humeri, also some other long bones. The parchment-like skull still remained and could be discerned even as late as the first part of February, 1923, altho the islands of bone mentioned above had increased in number and size, and it could be seen that it would be only a question of time when the head would be all right.

During the middle of February the chronic bronchitis increased in severity, until rales were to be heard all over the chest, and, he acted like an asthmatic. He died of capillary bronchitis February 23, at the age of one year and eight days.

During his life time he was carried for the most part on a pillow, making no effort to sit up. He developed two teeth. He was not able to pronounce any words. Physically, he was about the same as a child of three and a half months, and mentally, one of about eight months.

During his short life he sustained thirty-five fractures that could be demonstrated, also by means of splints he was saved from eighteen others which were threatening, evidenced by swellings, pain and previous callus formation. Had more frequent radiographs been taken there would have been more breaks shown, I am positive. An autopsy was not obtained.

SYMPTOMS

The symptoms have been covered more or less above, but it is well to summarize them here. For the most part they are the same as would accompany any fracture in an infant, but I wish to reiterate that in the above instance the majority of fractures were preceded two days before their occurrence by a very definite intestinal derangement, followed by an enlargement of some long bone, this enlargement being produced in twenty-four hours. It was hard, indurated, spindle-shaped, large enough to produce tense mottled skin with the feeling of local heat. The process sometimes stopped at this stage but more often went on to fracture, apparently an attempt on the part of nature to protect itself against the osteoporosis going on.

TREATMENT

No author has had the temerity to suggest a treatment which he would recommend. The above case was treated as if it were an instance of endocrine aberration, but no definite result is to be recorded.

SUMMARY

1. Osteogenesis imperfecta is a peculiar fragility of bone observed in the span of life, intra-uterine to adult, caused by malfunction of medullary and periosteal osteoblasts, and of undiscovered etiology.

2. It may be characterized by sudden fractures preceded at times by intestinal derangements and protective callus formation sufficient to abort a break, or the fracture is followed by a very rapid callus and union.

3. The symptoms of which are those usually accompanying fractures, also disuse of part before fracture; a rapid spindle-shaped callus with local heat; redness and brawny swelling under a tense mottled skin; vault of skull membranous at birth —and sometimes dark blue sclerae are to be observed.

4. Treatment of no avail.

5. Prognosis is poor, the majority of patients dying before birth, others in early infancy.

Masonic Temple.

EXTRA PLURAL PNEUMOLYSIS IN THE TREATMENT OF LUNG ABSCESS*

T. W. Buschmann, M.D.
SEATTLE, WASH.

The following case prompted the writing of this paper:

Patient J. S., age 31, male, single, Italian by birth. Father and mother, five brothers and two sisters living and well. No history of cancer, tuberculosis, mental or metabolic disease in family.

Diseases of childhood; measles and chickenpox. Diseases of adult life; influenza 1918, mild attack. Operations; tonsillectomy September 8, 1923. Has worked as a clerk for past three years, prior to that time was a butcher. Lives at home, does not drink or smoke.

Four days following tonsillectomy, patient began to bring up a foul smelling purulent sputum. Between time of removal of tonsils and commencement of expectoration, patient experienced a constant sense of uneasiness. Ever since he has suffered from the following symptoms:

(1) Profuse expectoration at frequent intervals day and night, the intervals usually being about half an hour.

(2) Septic temperature reaching 103°, rapid pulse up to 155, and respirations up to 45 and 50.

(3) Occasionally after spell of coughing would bring up a little blood.

(4) Dyspnea on slight exertion.

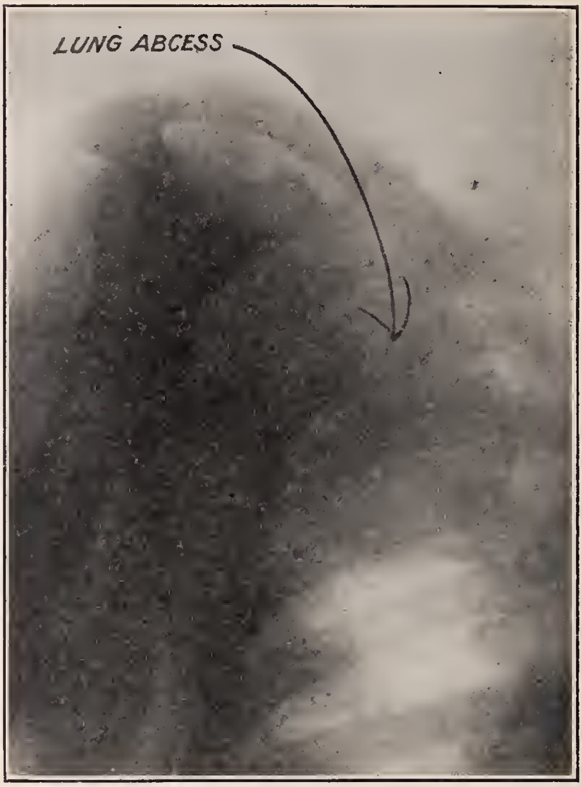
(5) Very profuse sweating associated with chills and temperature.

(6) Continuous exhaustion.

(7) Insomnia.

(8) Has lost 20 pounds in weight since tonsillectomy. Appetite very poor, and gradually reduced till at last he was not able to take milk, and could only take broth prepared and brot to him by his mother. Bowels regular. No headaches, no special symptoms. Has had casts and albumin in urine off and on since tonsillectomy.

General appearance pale, and acutely ill. Strained expression, eyes bulging, rather nervous. Neck negative. No adenopathy. Height 5 ft. 6 inches. Normal weight 172 pounds, present weight 158 pounds. Chest well formed. Respiratory movements restricted on right side. Impaired resonance over upper lobe extending to third rib. Loud coarse sonorous rales heard over right upper lobe posteriorly and anteriorly. Increased fremitus over upper right lobe.



X-ray showed dense impenetrable mass first to second interspace right side. Haziness involving entire upper lobe to third rib. Abdominal examination negative. Extremities negative. Genitourinary negative. Sputum on many occasions showed many pus cells, few streptococci, and few pneunococci. Feb. 16-24 Hemoglobin, 80 per cent R. B. C. 3,860,000. Leuks: 11,600. Large lymph: 20. Polys: 80. Feb. 27-24 Hemoglobin, 80 per cent R. B. C. 4,000,000. Leuks: 11,200. Large lymph: 20. Polys: 80. In view of x-ray findings, cavity upper right lobe; and clinical findings, expectoration in large quantities, 12-15 ozs. of foul smelling sputum day and night, mostly in the morning, disturbance day and night, loss of appetite inability to eat anything except small quantities of milk and broth, loss of weight (20 pounds) and strength; diagnosis of lung abscess was made. Artificial pneumothorax had been performed but was not followed by any improvement in symptoms, evidently because of dense adhesions in upper right lobe, preventing collapse of this portion of the lung. In view of the history and findings, operation was advised.

Operative findings: Abscess 6x7 cm. in diameter in upper right lobe, reaching from second to fourth rib. Entire right upper lobe of lung had had the consistency of liver. Operation performed: Resection second and third rib, 4 inches of each. Extraplural pneumolysis of entire upper lobe. Iodoform gauze packing was used to keep lung in state of compression.

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* Read before the Seattle Academy of Surgery, April 5, 1924.

Lung abscess was known in the days of Hippocrates, for he taught that a pulmonary abscess that had burst into the plural cavity could be treated by draining the latter. Schenck promoted spontaneous rupture of an abscess in 1584, by hot fomentations applied to the chest wall.

Our next knowledge of lung abscess dates to Baglivi, who in 1696 first established treatment by costal incision. Campardon, in 1759 reported a case which he cured by incision of chest wall. Gumprecht, in 1793 emphasized the importance of determining the presence, and seat of pus, and the presence or absence of plural adhesions. These are probably the most important observations made up till this time.

For the next 100 years, development of the surgery of pulmonary suppuration was slow, and consisted chiefly of individual cases, Garre having collected only 122 cases from the entire literature. Huntington, at the Massachusetts General Hospital, reported 32 cases in 1836, observed during the previous 18 years, none of which were operated upon. Most of the operations during this period, consisted of trocar puncture, or incision of abscess pointing into chest wall. Intercostal incision was performed by a number of men.

On account of the uncertain results of treatment and the very high mortality up to this time, search was made for other methods of treatment. In 1860 Green atempted to catheterize the air passages to promote nature's methods of drainage. Attempts were made to inject antiseptics into the bronchi. Sterilization of the lung parenchyma was attempted by the injection of carbolic acid, tincture of iodine, salicylic acid, etc. The next great advance was the demonstration by Gluck and others, that animals can survive resection of the lung, and that one lung can function for both, as in the case of other paired organs. The most important early contributions were first: That of Christian Fenger who reported five cases from the literature, and one of his own, and Bull, Professor of Surgery at the University of Christiana, Norway, in 1882, who reported 19 cases, Runeberg, 7 cases of lung abscess. Tuffier in 1897, 49 cases of abscess, and 45 of bronchiectasis. In 1903, Garre added 278 cases, and in 1912 collected 182 cases, making in addition to the cases previously reported, about 600 cases in the literature up to 1912. At Rochester 70 cases had been operated up to 1919, with a mortality of 73 per cent. It is evident, therefore, that lung abscess as compared with other surgical conditions, has received little atention, or many cases have escaped recognition. (Hedblom)

As to Etiology:

(1) Lung abscesses may develop as a result of inflammatory process in the lung, such as pneumonia, or influenza, the latter being a very frequent cause. (2) Infection may be carried thru a bronchus; this is particularly apt to occur, as in the case presented tonight, while the patient is in a state of surgical anesthesia, the pharyngeal reflexes being completely abolished and the bronchial musculature relaxed, infected material is carried thru the lower air passages and gives rise to a localized pneumonitis which results in abscess formation. Foreign bodies, such as food particles or secretions from the nose or throat may be suddenly carried through the glottis during sudden laughter, or hurried eating. This is particularly apt to occur if there is paralysis or partial paralysis of the cranial nerves supplying the pharyngeal musculature which occurs in many diseases of the central nervous system. Five cases in 56 of Dr. Hedblom's followed tonsillectomy. Fifteen cases of lung abscesses treated at the Mayo Clinic in three years, 1916-1919, followed tonsilectomy. Bevin collected a series of 19 cases following tonsillectomy with a 75 per cent mortality. The fact that out of 15,275 tonsillectomies under local anesthesia at the Mayo Clinic not one case of lung abscess developed, is sufficient evidence to prove the relationship of deep narcosis in operations on the upper respiratory passages, to lung abscess.

(3) Infection may be carried thru the blood stream, in any general infection.

(4) Lung abscess may be the result of direct extension from surrounding structures, as in cases of empyema, sub-diaphragmatic abscess, peptic ulcer, etc.

(5) It may be embolic in origin, particularly in ulcerative conditions of the right heart, retro-peritoneal phlegmons, or thrombotic conditions of the veins of the pelvis or lower extremities.

The chief symptoms are:

(1) Chronic productive cough, with profuse expectoration, the sputum being frankly purulent,

and of a characteristic foul odor, and brought up in large amounts. The expectoration comes from two sources; (1) from the abscess itself, and (2) from accompanying bronchitis, and the quantity of sputum is an index in a general way, to the size of the cavity. In the case presented this evening, it varied from 12-15 ozs. in 24 hours. The onset of expectoration when an abscess ruptures into a bronchus, as usually occurs, is very characteristic. A sense of compression and discomfort in the chest precedes a sudden violent spell of coughing, which is followed by a profuse expectoration and relief of all subjective distress. Breathing becomes freer, and pain ceases. Cyanosis and dyspnea disappear. In many cases this process repeats itself many times before the cavity is completely evacuated. Occasionally such complete evacuation of the cavity takes place, according to Sauerbach, that spontaneous healing occurs. But on the other hand, the sudden overloading of the bronchial tree with pus—the patient being unable to expel it with sufficient force and rapidity — may result in suffocation and immediate death.

The character of the sputum is quite typical. After standing for a short time it separates into three layers: (1) Lower heavy layer, consisting of pus, (2) a middle turbid watery layer, and (3) an upper frothy layer. Frequently there can be found in the middle layer brownish shreds representing exfoliated lung tissue. Microscopically we find numerous pus cells, many of which are decomposed to detritus. Detrich's plugs, 1 to 3 millimeters in diameter, and containing fatty acid crystals. We find also, hematoidin crystals, amorphous blood pigment, alveolar cells, erythrocytes, cholestrin crystals, and, most important of all, elastic fibres, which always indicate a progressive destruction of lung tissue. In many cases, we find very profuse morning expectoration. In others, expectoration occurs in smaller quantities at frequent intervals thru the day and night. We often find that the patient will assume a certain position in which he can most successfully empty the abscess cavity.

(2) Septic temperature.

(3) Rapid pulse, which may be present even in the absence of temperature due to the effects of toxic absorption on the myocardium.

(4) Leukocytosis ranging from 10 to 30,000. In our case, it amounted to 11,000.

(5) Anxious expression, which was a very marked feature in the present case.

(6) Dyspnea of greater or lesser extent, with mild cyanosis.

(7) Subjective localized pain in the region of the abscess, which is of great diagnostic significance.

(8) Trommelschlagelfingern, or drum stick, or clubbed fingers, which was very marked in our case, and has cleared up to a large extent since the operation.

(9) Profuse sweating, always a constant finding, and a tendency to coldness of the hands and feet.

The local findings: (1) Local tenderness on pressure; this symptom is considered by Sauerbruch, a most important one. (2) Dullness to percussion, or at times tympany, depending on the size of the cavity, and the presence or absence of secretion, and its distance from the chest wall, amphoric breathing, and metallic rales. In our case, in addition to this, there was a coarse sound on inspiration and expiration resembling more or less a sound produced by drawing a rosin string thru a tin can. This annoyed the patient very much, and could be heard by anyone standing at the bedside. Dullness, alternating with tympany and bronchial breathing, with the addition possibly of metallic tinkling, are absolute proof of cavity formation.

(3) X-ray evidence of cavity is probably the most important local findnig. Treatment: (1) Postural, resulting in gravity drainage; this was discussed at length by Dr. Ewarts Graham at one of our recent medical meetings. This treatment should not be continued for longer than two or three weeks. (2) The operative. According to Sauerbruch, the mortality following medical treatment, ranged from 60 to 90 per cent in the hospitals of Berlin, during the years of 1897-1900. Mortality following surgical treatment, 34 per cent. Sauerbruch's mortality is 35 per cent in 133 cases, Lenhartz's mortality, 37 per cent in 85 cases. Mortality in 30 acute cases in the Mayo Clinic 33 per cent, and the chronic cases, 47 per cent. In view of these facts, it is important that palliative measures such as postural treatment, etc., should not be extended over too long a period, unless definite improvement results.

Methods of surgical treatment are as follows:

(1) The collapse of the lung by the production of artificial pneumothorax, such as was attempted in this case, but could not be completely executed on account of the dense adhesions involving the visceral and parietal pleura over the entire upper

lobe of the lung. Adhesions are present in most of the chronic cases of abscess, so this method is necessarily of limited application.

(2) Drainage of the abscess from the outside after adhesions have formed between the visceral and parietal pleura. This is the usual method of operating for lung abscess.

Operation performed without adhesions usually results in empyema, a complication resulting in very high mortality.

If adhesions are not present as a result of the simultaneous involvement of the lung surrounding the abscess cavity, it is necessary to create such adhesions artificially, preferably by two-stage operation, in which two or three ribs are resected, and the visceral and parietal pleura are stitched together, or by packing the wound with gauze, giving essentially the same results. Unfortunately bronchial fistula follows a comparatively large percentage of these cases, which in many instances, is almost as distressing as the original condition itself.

(3) Thoracoplasty, which consists of the removal of a sufficient number of ribs to allow the lung and chest wall to collapse together.

(4) Radical exicision of the involved section of the lung, an operation necessarily with a very high mortality.

The method used in our case consisted of the production of an extra plural pneumothorax, or the separation of the adherent visceral and parietal pleura and the involved lung, en masse, from the thoracic cage thru the line of cleavage of the endothoracic fascia, essentially a pneumolysis or apicolysis. This method is mentioned in the German system of surgery, by Bier Braun and Kummel, in which it is advocated by Jesson as preferable to thoracoplasty for tuberculous cavities. In the method described, which had only been in use for a comparatively short time, drainage was secured by the use of a large rubber tube which was inserted to the bottom of the space created by operation, for a period of two days, and thereafter the cavity was simply mopped out daily with antiseptic solution. It is his contention that the creation of a state of barometric pressure outside of the lung, equal to that in the trachea, is sufficient to keep the lung in a state of collapse until healing occurs. In our case, however, the consolidation of the lung surrounding the cavity involved the whole of the lobe, and had a liverlike feel. In order to compress the cavity, therefore, more than atmospheric pressure was required. We used a tamponade of gauze and by this means, kept the entire upper lobe in a state of collapse. This gauze was changed once or twice daily since operation. The progress of the case was practically uneventful, and surpassed all expectations. Patient was in a very critical state after tonsillectomy September 10, 1923, and up to the time of operation, which all those who are familiar with the case will agree. He had expectorated 12 to 15 ozs. of foul sputum during 24 hours, up to the time of operation, February 9, 1924.

There was a reaction following the operation for 4 to 5 days after which there was a gradual subsidence of all symptoms. The temperature came down to normal line on Feb. 24, 1924, or two weeks after operation, and with the exception of a couple of transitory elevations, lasting for a day or two at a time, has remained normal ever since. Pulse rate has gradually steadied, at the present time ranging between 70 and 80 per minute. Respirations have come down to 20, as compared with 30 to 50 prior to operation; the profuse sweating, cyanosis, the expression of anxiety have gradually disappeared. The clubbing of the fingers has disappeared to a large extent. His color has improved and his appetite is abnormal, requiring a double helping at every meal, and he has gained considerable in weight. The quantity of sputum, which had been the most distressing symptom to the patient and his relatives, gradually diminished in quantity and completely disappeared 28 days after operation.

Our prime purpose in the procedure used, in view of the patient's weakened and toxic condition, was to be conservative, at the same time attempt to do something which might improve his condition, and permit of further operative measures, probably in the form of a thoracoplasty, which it was thot would be indicated to effect a cure. The opening in the chest wall, however, closed up promptly a few days after the final packing was removed, and has been completely healed for two weeks. Patient states that his health is even better than it was prior to his tonsilectomy.

In conclusion: Less than 10 per cent of adults with lung abscess get well spontaneously. The operative mortality of those afflicted with chronic abscess is considerably higher than that of the acute stage. It is therefore unwise to delay operation too long when once recognized.

Lowman Building.

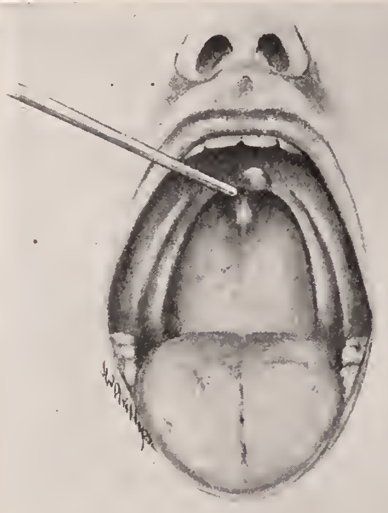


FIG. 1

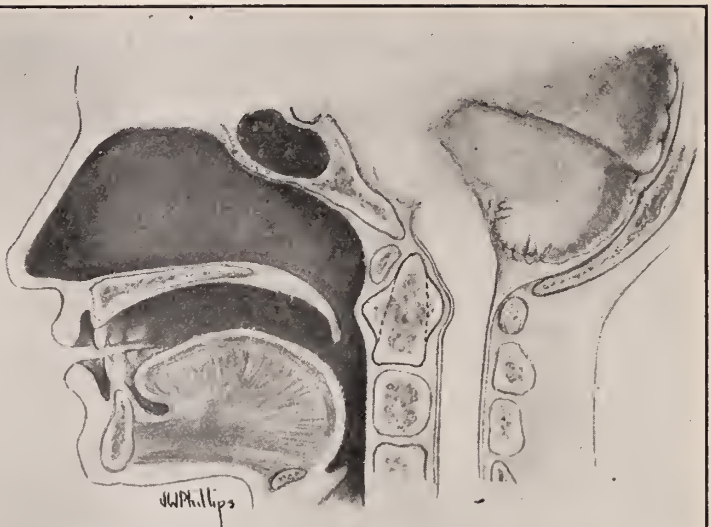


FIG. 2

EXOSTOSIS ON THE BODY OF THE AXIS CAUSING DEATH BY BULBAR PARALYSIS

E. F. Chase, M.D.
SEATTLE, WASH.

Mrs. A. J., a housewife 29 years of age, a native of Sweden, had always been in good health until a few months before she was referred to the writer, by Dr. J. Warren Richardson, for removal of tonsils in October, 1923.

A diagnosis of pulmonary tuberculosis had previously been made, altho tubercle bacilli had never been found in the sputum. The family history was unimportant. The personal history was as follows: Had had frequent, repeated attacked of tonsillitis, accompanied by loss of weight. Rheumatic pains in hands and forearms, the fingers were swollen, and a moderate arthritis deformans existed. There was complaint of cough at times, and annoying secretion in the throat, especially in the morning.

An examination disclosed the septum straight, thin, and in the midline. A simple rhinitis, with the turbinals slightly hypertrophied, and absence of secretion in either nares. Sinuses negative to inspection and transillumination. Adenoids absent, and the nasopharynx normal except for an exostosis in the midline, just behind the base of the uvula, as depicted in Fig. 1, which, altho noted and commented upon at the time, was not considered of any importance. The tonsils were of moderate size and chronically inflamed. Hypopharynx, larynx, and cords were negative.

A local tonsillectomy was performed at Providence Hospital, October 6, 1923, and the patient was discharged the next day in good condition. The patient then passed from our observation until September 26, 1924 when she was seen in consultation with Dr. Elmer Nicholson at the Minor Hospital.

On this date she gave the following history: The repeated sore throats were relieved by the tonsillectomy and she thot she was better until the latter part of the year, at which time she consulted Dr. Nicholson, complaining of rheumatism and a vague spinal condition. Since that time there had been a gradual loss of weight and strength, until the patient was unable to leave the bed. She had had difficulty in swallowing for the past three or four months, and in clearing her throat. Never had any pain or headaches until two months previous to last examination. Moderate headaches followed four x-ray treatments of half hour duration, at daily intervals, to the cervical region.

The patient was emaciated and thot she had lost thirty pounds during the past six months. There was evidence of arthritis, and a hyperkeratosis of the palms of the hands, soles of the feet, and on the external aspect of the thighs. Also, there was a generalized adenopathy. One gland in the cervical region was excised for diagnostic purposes and the microscopical diagnosis was inflammatory hyperplasia.

Blood Wassermann's were negative, as well as the spinal fluid. An examination of the nose and throat showed the same as noted above, except that there was an apparent paralysis of the constrictors and soft palate. There was also anesthesia of the palate and pharynx. Tonsillar fossae were clean, and the pillars intact.

The exostosis of the vertebra was as formerly noted. The larynx and cords responded to stimuli. The patient talked with difficulty, and was unable to expectorate, blow, or whistle. Sinuses were negative and the teeth good. Both sides of the face were somewhat expressionless, and the patient anxious.

An examination of the eyes disclosed the pupils and reflexes normal, as were the fundi, nerveheads and media. The head was held somewhat stiffly to the right, altho the neck was not sore or tender to the touch. Goiter was not palpable, lungs clear and the heart negative. Blood pressure was; systolic 110, diastolic 70. Abdomen was negative. Genitourinary examination negative. The urine had a specific gravity of 1022, and a trace of albumin. A blood examination showed leucocytes 9000, polymorphonuclear 78 per cent, and large mononuclear 22 per cent. Stool examination disclosed undigested food particles, many bacteria, and evidence of blood.

A stereo x-ray of the skull and neck was ordered. Dr. C. H. Thomson reported "no material radiographic findings." Temperature on admittance, 98.8°, and increased to 102° at time of demise, three days later.

Autopsy was performed ten hours later by Drs. D. H. Nickson, and C. E. Watts. Heart and lungs were found negative as well as all abdominal viscera, except for a slight interstitial nephritis. On raising the calvaria, the cranial contents, with the meninges, were found normal. There was no evidence of any abnormality until the cord was severed in the spinal canal where an exostosis was noted on the posterior portion of the body of the axis, as depicted in Fig. 2.

This case is reported because of the unusual grouping of symptoms. Here we have an arthritis deformans, with symptoms suggestive of pulmonary fibrosis, and an exostosis in the pharynx. Then we note loss of weight and strength, followed by emaciation, with difficulty in swallowing, expectoration, and articulation, due to paralysis of the ninth cranial or glossopharyngeal nerve.

Since the nuclei of the glossopharyngeal and the vagus, or tenth cranial nerve, are in juxtaposition, it is logical to assume that death resulted from interference with the function of the vagus due to pressure upon the medulla of the exostosis on the body of the second cervical vertebra.

Cobb Building.

RETROPERITONEAL TUMOR

Drs. Kintner, Winslow and Whitlow
SEATTLE, WASH.

REPORT OF INTERNIST

G. M. S., man of 68, was admitted to the King County Hospital in January, 1924. No other physical disabilities being discovered, he was operated upon the first of February for right inguinal hernia, right hydrocele and left varicocele.

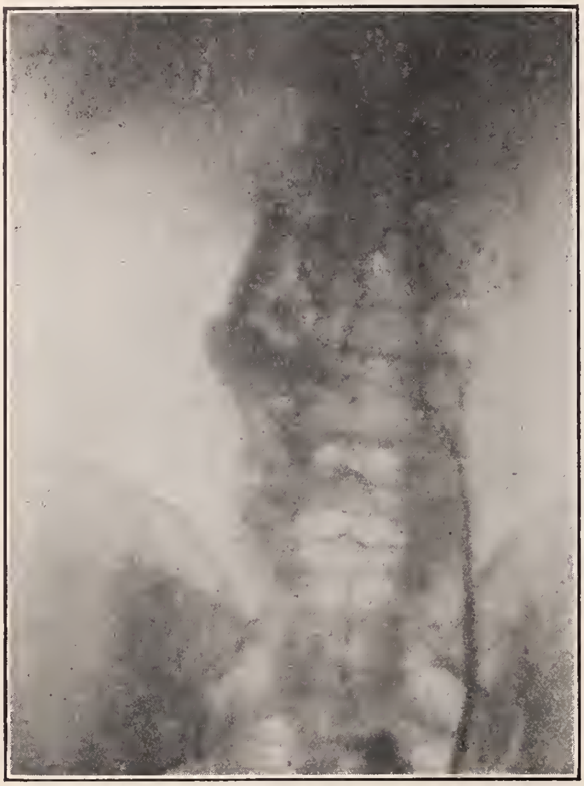
Recovery was delayed for the reason that a phlebitis of the right leg developed some weeks after the operation and was very persistent. Some time in April, when the patient was up, there was a recurrence of the right inguinal hernia and Dr. Kintner, visiting surgeon for the hospital, did a herniotomy under local anaesthesia and kept the patient in bed for some six weeks. Shortly after the patient was up again in June he began to complain of pain in his herniotomy scar and, about this time, discovered a mass in his right hypochondrium while taking a bath. The mass did not give the patient any trouble, except to arouse his curiosity as to its nature, as it did mine.

This mass was distinctly fluctuating, and about the size of one's fist. It was not movable, nor did it descend with inspiration, nor was it tender. Pressure with the left hand in the right flank of the patient caused the tumor to bulge forward under the right hand resting on the gall bladder region of the belly.

In tumors of this region, that of the gall bladder and right kidney, one must consider growths connected with the liver, gall bladder, hepatic flexure of the colon, pyloric end of the stomach, right kidney, and retroperitoneal and glandular masses.

There was no disturbance of the liver function, nor alteration in its size. Also stomach and intestinal symptoms were absent. The gastric contents and barium meal fluoroscopy were normal. There was a negative Wassermann reaction. The renal functional ('phthalein) test was fifty. The urine was normal. There was no history of gall bladder trouble, and the fact that one could push the growth forward by pressure on the right back and flank spoke rather for a renal than gall bladder lesion. The blood was normal with 4,400,000 red cells and 10,000 polymorphonuclears.

In order to exclude a kidney lesion more especially it seemed advisable to have a renal study and pyelograms made. This work was done by Dr. L. W. Whitlow, urologist for the hospital. His excellent pyelograms demonstrate, as no other



(Left) FIG. 1. (Right)

means could, the dislocation of the right kidney to the left of the spine, and made possible a positive diagnosis of retroperitoneal cyst before the operation, which was then advised. Nothing but a retroperitoneal growth could so push the kidney out of its normal bed. We are indebted to Miss Alice J. Cummings for her excellent x-ray work. It will not be appreciated how good are the pyelograms so much have they suffered in their reproduction.

KENELM WINSLOW.

REPORT OF UROLOGIST

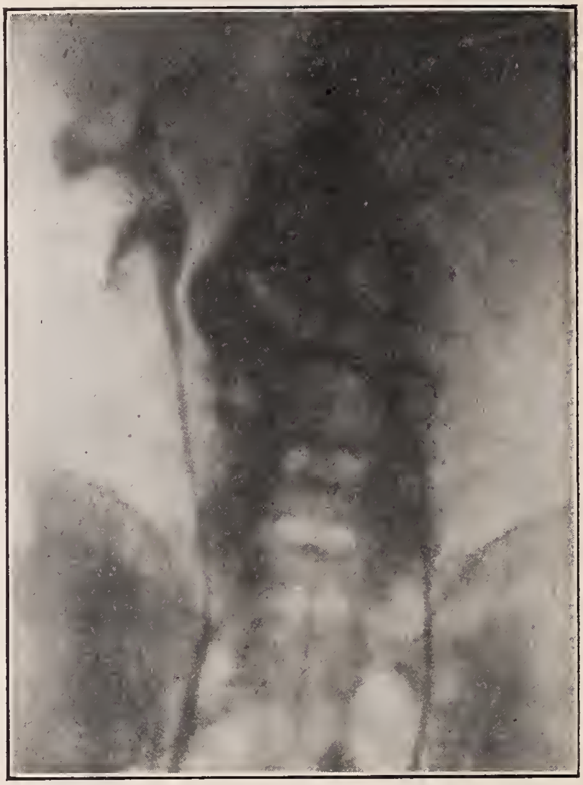
External genitals, normal. Cystoscope enters readily. Bladder capacity, eight ounces. Vesical mucosa appears normal, no tumors or abnormalities, vesical neck and trigone negative.

Ureteral orifices small and spastic, efflux normal. Ureteral catheters entered both sides 25 cm. after overcoming spasm.

Phenolsulphonephthalein: appears left side, 4 minutes; right 4½ minutes. Quantitative test not done.

Pyelograms. Fig. 1. Right kidney filled with 10 c.c. 15 per cent sodium iodide. Renal pelvis to left of spine and kidney rotated. Fig. 2. Double pyelogram. Left kidney normal location; right as noted above. Both renal pelves normal in size and shape. Diagnosis: Retroperitoneal tumor.

L. W. WHITLOW.



(Left) FIG. 2. (Right)

REPORT OF SURGEON

Patient was operated July 2, 1924, under ether anesthesia. Thru a right rectus incision a tumor was exposed. This proved to be a retroperitoneal cyst which had split the meso-colon, and the colon was stretched across the lower pole of cyst. The right kidney was displaced to the left of the spine, and the posterior surface was flattened or indented by pressure of the cyst, but the cyst was extra renal. The peritoneum over the cyst was incised and aspiration attempted, but the contents were too viscid to aspirate, so the cyst was opened and about one quart of gelatinous contents scooped out. The inner wall of the cyst was covered with small calcareous plaques. The cyst wall was easily shelled out, little hemorrhage being encountered. The right kidney and colon were replaced, but not sutured. One small drain was inserted and the abdomen closed. Uneventful recovery. At the present writing the patient appears to be in perfect health and shows no sign of any recurrence of the tumor.

WILLIAM C. KINTNER.

REPORT OF PATHOLOGIST

Dr. J. M. Blackford made a pathological diagnosis of colloid cancer.

SURGERY OF THE BILIARY TRACT IN THE PRESENCE OF JAUNDICE*

RUDOLPH G. ANDRES, M.D., F.A.C.S.
SPOKANE, WASH.

The unusual amount of investigation in the last few years in regard to the surgery of the gall bladder has brought about the standard operation, cholecystectomy. One of the greatest factors in making cholecysectomy the operation of choice is a clearer understanding as to the route of infection, due principally to the work of Rosenow and Graham. Not only has cholecystectomy in the absence of contraindications been standardized as the operation of choice, but also the mortality has been reduced to or lower than that of cholecystostomy.

However, when we have the presence of jaundice or a history of past jaundice, we must be circumspect in our judgment before attempting any routine type of procedure. Surgical jaundice cases have a much higher mortality than the average case and there is a possibility of doing great harm to the individual if all factors are not considered. Not only must there be clear indications as to the operative procedure but unusual attention must be paid to the preoperative preparation of the patient. There was a time when patients were sent to a hospital and in a few hours were on the operating table, but today the capable surgeon realizes that the successful termination of any surgical case is dependent on four clearly definite steps.

First, the careful painstaking history and examination, arriving at as nearly a correct diagnosis as possible, and bringing into play such laboratory tests and instruments of precision as are indicated.

Second, the preoperative preparation of patients. While there are constant advances in surgical technique, no factor in the last decade has done so much as proper preparation of the patient in reducing the mortality rate. This is equally as true of jaundice cases as of prostatic work.

Third, operative procedure:

One of the greatest advances in operative work has been the change, which has gradually been brought about, namely, that of having an open mind when entering the abdomen and attending to what is found.

Local anesthesia has done much in reducing the mortality and has made it possible to operate on cases that would otherwise have a risk so high as to rule them out of the surgical class.

The stage operation has been a decided factor in reducing our mortality.

Fourth, postoperative care:

While formerly very little attention was paid to this stage, today it ranks with the other steps. Up to the time Murphy brought out his continuous proctoclysis it was an axiom that the fate of the patient was sealed at the time the surgeon closed the abdomen. In jaundice cases the postoperative care is as important as proper surgical procedure.

The usual causes of surgical jaundice can be divided into three main classes. I am not considering those jaundice cases of a haemolytic nature.

First, infections:

As before mentioned, Rosenow has demonstrated the primary focus is usually in some distant part of the body, from which bacteria carried by the blood stream become lodged in the walls of the gall bladder, thence to spread to the liver. Graham has shown the infections such as appendicitis, diarrhea, typhoid fever or other inflammatory processes in the intestinal tract, are frequently picked up by the portal system and carried to the liver, setting up a hepatitis with a secondary involvement of the gall bladder. If this continues, sooner or later the entire chain, liver, gall bladder, pancreas and ducts become involved. Fortunately in the majority of cases the jaundice is due to a mechanical interference in the hepatic or common duct.

A large inflammatory gall bladder distended with bile, pus or stones may cause pressure on the hepatic ducts, or a marked pancreatitis will interfere in the emptying of the common duct. Moreover, products of infection, as stones, may occlude the ducts. When the jaundice is due to the extension of infection into the liver ducts, then the condition is a serious one.

Second cause, new growths:

These may be cysts or malignant growths acting purely in a mechanical way causing obstruction. Once there is primary or secondary malignancy in the liver the case is beyond the realm of surgery.

Third cause, injuries (these may be accidental or intentional):

In the first category are those cases wherein during the removal of the gall bladder, with improper exposure and identification of the anatomical structures, a piece of the common or hepatic duct is removed and followed by a stricture. This can be avoided if a golden rule is made never to place a clamp on the cystic duct until the common, cystic and hepatic ducts have been definitely identified.

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*Read before the Thirty-fifth Annual Meeting of Washington State Medical Association, Everett, Wash., August 12-14, 1924.

Another common cause is the slipping of the ligature on the cystic artery followed by hemorrhage, the blind application of forceps and ligation of tissues in mass.

Intentional causes:

While the number of cases that come under this head are few, the occasional following of a choledochostomy with excessive scarring or adhesions with resultant stricture is a responsibility we should keep in mind.

In obtaining the history in all jaundice cases it is important to know if the attack was preceded by acute pain; if there have been any previous attacks of jaundice, their severity and duration should be ascertained. In a history of preceding attacks which have cleared up, there is a probability of the present attack subsiding and a much less risk in an interval operation. After waiting a number of days or a week, if there is no evidence of improvement, then the case will have to be judged upon the general condition of the patient. Temperature and high leucocytosis are indications for further waiting until the acute condition subsides, and at this period the generous administration of fluids, 3,000 or 4,000 cc. in twenty-four hours, either by mouth, proctoclysis or subcutaneous infusion, is indicated.

In jaundice cases of 1st and 2nd degree, that is, where there is only moderate scleral discoloration or some involvement of the skin, little further preoperative preparation is necessary. There is no real indication to make these cases one of emergency.

In the 3rd and 4th degree, there is intense jaundice over the entire body, deep color to the urine and light stools. They frequently complain of intense itching. These cases demand far more consideration in their preoperative preparation. They carry a much higher mortality due to the frequent complications of kidney insufficiency or hemorrhage. The usual time for these to arise is from two to six days after operation.

It is important to know the venous bleeding time, as it is often found to be twelve or more minutes; to make these cases possible surgical risks, it should be reduced to eight minutes or lower. Lee and Vincent, in their experimental work have shown that the intravenous injection of calcium chloride would materially reduce this. Wright and Walters have used this method: giving 5 cc. of 10 per cent solution calcium chloride in redistilled water daily for 3 or more injections. The transfusion of whole blood greatly reduces the bleeding time but it also throws a larger load upon the kidneys and frequently we have a temporary anuria for a period of twenty-four hours.

The kidney function is of important consideration. The bile in the general circulation acts as an irritant in the kidneys, causes a cloudy swelling and in sufficient time sets up an actual nephritis. The liberal use of fluids will reduce the irritation and increase their function. Too much fluid will produce a water nephritis as demonstrated by Rowntree. The daily functional test and blood urea direct us to the time the kidneys are able to withstand the added load of a short anesthetic. Not alone are the kidneys more or less blocked because of the toxic state of the patient, but there is a deficiency in the liver function. Opie and Mann have shown by increasing the supply of glycogen the toxic state is reduced and the liver stimulated. The giving of large amounts of carbohydrates by mouth, and glucose, either by mouth or proctoclysis, will best combat this state.

The choice of an anesthetic is important. The shorter the general anesthetic, the lower our risk will be proportionately. If we have decided to do only a stage operation, the possibility of accomplishing this under local anaesthesia is much greater than where there is associated exploration. Personally I am in favor of the combined anesthetic. A small preoperative dose of morphine, the bilateral blocking of nerves in the pararectus sheath and the giving of gas or ether only during the period of exploration. Even if a stage operation is decided upon, the cause of the jaundice should be ascertained at the first step.

Gas is preferable to ether when considering the effect upon the kidneys. From the standpoint of the surgeon it does not always give the complete relaxation necessary in exploring the common duct; far more shock arises and the exploration is less thorough. To do good biliary surgery there are two requisites; complete relaxation and adequate exposure. I consider these of equal importance.

The question often arises, shall we do a temporizing operation or a completed operation? This will materially depend upon the individual judgment and the time necessary to correct the pathological lesion found. There are certain conditions which should greatly assist in our final decision. In those cases of the most severe type of jaundice, classified as 4th grade, where the coagulation time has been high, the kidney function low and considerable preparation has been necessary to bring these near the normal limit, temporary operation is indicated. Usually if the gall bladder has not been removed previously it will be found markedly distended, and after exploring, to find the cause of the jaundice, nothing more should be done other than a cholecystostomy with gradual decompression as suggested by Crile. The sudden free drainage with relief of pressure causes a venous engorgement of the capillaries in the mucous membrane of the gall bladder with resultant hemorrhage. I have seen three cases at autopsy wherein an anastomosis was made between the gall bladder and duodenum or stomach. The entire gall bladder was filled by large blood clot; the bleeding did not arise from the suture line but from the capillary hemorrhages in the mucous membrane. The very object of the operation was defeated by the blood clot. These cases did not have the present careful preparation but were operated at a time when calcium was given only by mouth. In the absence of a gall bladder, or in the type where it is small and contracted and apparently only a remnant, or where there is permanent cystic duct occlusion, we have but one procedure, draining of the common duct. Naturally if a stone is present and not too much manipulation necessary, it should be removed at this time. If the stone is fixed in the duodenal end and it is necessary to pass probes, it should be removed at a later stage. Probing causes more or less traumatism which will invite hemorrhage. The hemorrhage may not be severe enough to cause death but sufficient to cause a uremic state from which the patient will not rally. I well remember a patient at the Mayo Clinic wherein it became necessary to pass a catheter into the urinary bladder on account of a retention. The patient developed a uremic state twenty-four hours later and died. At autopsy, the urinary bladder was full of blood while the operative field was free.

That group of cases, in the class of severe jaundice, having coagulation time and kidney function near the normal, with the usual preoperative preparation withstand the completed operation.

In the complete operation a frequent question arises as to what to do with the gall bladder. In the presence of common duct trouble, the duct being dilated and the gall bladder diseased, it is far better not to remove the gall bladder but to drain it and remove any stones, and open the common duct and drain it. Removing the gall bladder in an infection that is involving the entire chain, liver, gall bladder, ducts and pancreas, only adds to the risk and will not give the individual more benefit by its removal than by drainage. There are cases wherein the gall bladder is the definite source of the infection, the changes in the common duct are not marked, and upon opening the duct no obstruction is found; in these, drainage of the duct and removal of the gall bladder are indicated. In every case, if the common duct shows any change, it should be opened and probed.

In strictures of the common duct and obstructions that can not be removed, the presence of the gall bladder simplifies our problem; the ideal procedure being an anastomosis with the duodenum, and if this is impossible, with the stomach; in the latter, patients frequently complain of gastric distress and vomiting, due to bile being emptied into the stomach. In the absence of the gall bladder, we have one of the most trying conditions to relieve that can exist within the abdomen. Plastic work is rather unsatisfactory as it is followed by scar formation and recurrent stricture. Hepaticoduodenostomy, as described by Balfour, is an ideal operation in these cases if the duodenum is mobile and an anastomosis can be made without tension on the suture line. All anastomoses with the stomach or intestine are followed eventually by ascending infection of the liver. The use of the rubber tube is adaptable in many cases of stricture.

The postoperative care of jaundice cases is largely one of pushing fluids and glucose solution. The daily check on the coagulation time, kidney function and blood urea give us an index as to the possibility of two of the most frequent complications. Accurate records of daily fluid intake and output give us additional information on the kidneys. Good postoperative care does not mean treating complications but anticipating them, combating them before they arise.

Case 1. Mrs. M. W.; referred by Dr. Epplen; 4-24-24; age 56. Five years ago cholecystostomy, removal of stones; well up until one month ago; general malaise, gastric distress; sharp right upper abdominal pain, not severe enough for opiate, followed by jaundice gradually increasing.

Examination April 24, 1924—marked jaundice grade (4); systolic blood pressure 164; diastolic blood pressure 80; temperature normal; pulse 72; tenderness over upper right abdomen; postoperative incisional hernia. Urinalysis—bile present; trace of albumin; few hyaline casts; kidney function 45 per cent. Blood—hemoglobin 84 per cent; white blood count 9300; coagulation time 4½ minutes; non-proteid nitrogen 49 mg. per 100 cc.; Wassermann negative. Placed on carbohydrate diet and fluids to 3000 cc. in 24 hours. May 8, 1924—kidney function 50 per cent in 2 hours 10 minutes; non-proteid nitrogen 40.

Operation May 9, 1924—local and ether; gall bladder tense, bound down by adhesions, walls much thickened; common duct slightly enlarged; marked hepatitis; common duct opened and probed, no obstruction, Robson hepatic drain; gall bladder removed and hernia repaired; convalescence uneventful; discharged from hospital on 16th day; common duct drain removed on 21st day; jaundice entirely cleared up and feeling fine.

Case 2. Mrs. S. B.; referred by Dr. Keene; 6-22-24; age 58; hysterectomy 1908; cholecystectomy 1911; perfectly well until 6 months ago; epigastric tenderness and dyspepsia; attacks of tenderness gradually increasing. Two weeks ago jaundice appeared, gradually increasing; marked itching of the skin; no pain last week but jaundice increasing; loss of weight, 15 pounds; urine very dark; clay colored, rather soapy stools.

Examination—marked jaundice, grade (4); systolic blood pressure 155; diastolic blood pressure 75; temperature 99; pulse 72; upper abdominal tenderness beneath right rectus scar. Urinalysis—bile present; albumin, grade 2; many granular casts and blood cells; kidney function 47 per cent return in 2 hours 10 minutes. Blood—leucocytes 10,200; coagulation time 4 minutes; non-proteid nitrogen 35 mg. per 100 cc.; Wassermann negative. Placed on glucose solution and fluids.

Operation June 27, 1924—preliminary morphine gr. 1/6, local and ether; incision through old scar; marked adhesions; common duct one inch in diameter; marked biliary cirrhosis; mass lower end of common duct; common duct opened, nothing but white bile, unable to pass probes down, mass in head of pancreas; attempted to bring duodenum and stomach over to anastomose but impossible; Choledocho-enterostomy made with use of Sullivan tube; convalescence uneventful; temperature never over 99.8; pulse, highest 100; bile appeared end of 3rd day in stool; discharged from hospital on 18th day; jaundice entirely disappeared except the sclera; coagulation time never over 4½ minutes.

CONCLUSIONS

1. In deciding between stage and complete operations we are governed by coagulation time, kidney function and degree of jaundice.
2. Cholecystostomy is more frequently indicated than cholecystectomy in the more severe types of jaundice.
3. In doubtful cases make use of the stage operation.
4. The gall bladder is a useful organ in relieving irremovable common duct obstruction.

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THE UTEROSACRAL LIGAMENTS*

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In this paper I have purposely ignored the floor of the pelvis so as to emphasize the importance of the intra-pelvic supports of the uterus, and more particularly the greatly neglected uterosacral ligaments.

I hope no one will construe anything I may say, or not say, as meaning that the perineum is of no or of minor importance in maintaining the pelvic contents. I have assumed, for the purpose of this paper, that the perineum is intact or will be made so, and that any pathological condition present will receive its due consideration.

In the correct anatomic position the fundus of the uterus lies below and anterior to the brim of the sacrum and over the posterior two-thirds of the bladder. The cervix lies under the protecting brim of the sacrum. The fundus is maintained in its position by the upper part of the broad ligaments, the guy-rope effect of the round ligaments and by the relatively fixed position of the cervix.

The cervix is maintained in its position by the lower portion of the broad ligaments—the lateral cervicopelvic ligaments—and the uterosacral ligaments.

The uterosacral ligaments, consisting of muscular and fibrous tissue, running from the cervix to the rectum and to the second and third sacral vertebrae; the muscular fibers blending with the muscles of the rectum.

The functions of these ligaments are fourfold: to hold the cervix upward and backward; to maintain the vagina in its proper position; to support the rectum; and to maintain proper tension on the subvesical fascia.

Between the uterosacral ligaments and the cervix and rectum is a concavity, the pouch of Douglas—a potential hernia.

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Any relaxation of these ligaments permits an anterior and downward displacement of the cervix and enlargement of the pouch of Douglas with the development of the retrocervical hernia and rectocele; and a corresponding relaxation of the cervicopubic fascia, resulting in a cystocele.

This is the condition we have in a prolapse and with an acquired retroversion. A prolapse is always preceded by a relaxation of the uterosacral ligaments and an anterior displacement of the cervix.

Then in a prolapse or acquired retroversion what anatomical changes do we have?

(1) Elongation of the uterosacral ligaments;
(2) A shortened and more vertical vagina;
(3) Anterior displacement of cervix with a more vertical or retrovertical position of uterus;
(4) A much more freely movable cervix;
(5) Sagging of the rectum;
(6) Enlargement of the pouch of Douglas;
(7) Sagging of bladder.

These are the anatomical changes that have to be corrected to return the pelvic contents to normal. Does hoisting up of the fundus either by fixation or shortening of the round ligaments correct the above mentioned defects?

Can the mere raising of the uterus shorten the uterosacral ligaments, make less vertical the vagina, correct the anterior displacement of the cervix, make the cervix less movable, reduce the size of the pouch of Douglas, hold up the sagging rectum and bladder?

If not, then some method that will do these things should be employed.

The earliest records I have been able to find where the efforts were concentrated around the uterosacral ligaments to correct the malposition of the uterus described the work done by Amussat in 1850. He used caustic potash and the actual cautery on the space between the cervix and vagina, then by tamponing in front of the cervix hoped to hold it back.

Richelot practised the same operation in 1854.

Herrick in 1883 tried to produce the same result by means of sutures.

About that time Frommel proposed shortening the uterosacral ligaments by the abdominal route.

Byford practised Amussat's operation in 1888, and also tried shortening the uterosacral ligaments by the vaginal route.

A year later we find Pean doing Amussat's operation; and Freund shortening the uterosacral ligaments by both the abdominal and vaginal routes.

In 1890 Frommel shortened these ligaments by the abdominal route; Nicoletis sutured the anterior surface of the cervix to the posterior vaginal wall; and Bossi performed Herrick's operation of suturing the cervix to the posterior vaginal wall.

The following year Herrick and Sanger shortened these ligaments by the vaginal route.

In 1896 we find Gottschalk shortening these ligaments by the vaginal route; Godinho shortening both the uterosacral and the round ligaments at the same time by the vaginal route; and Wertheim and Mandell shortening both the uterosacral and round ligaments by the abdominal route.

In 1899 Schucking practised lengthening the anterior wall of the vagina by making a transverse incision thru it near the cervix and suturing the wound lengthwise so that it appeared when sutured to be anteroposterior in direction. He suggested the opposite course might be used back of the cervix. Bovee used the vaginal route, dissecting the uterosacral ligaments free, plicating them and suturing with kangaroo tendon. Sometimes he also lengthened the anterior vaginal wall and, in two instances, also shortened the round ligaments.

Bovee also operated by the abdominal route using similar technique. He thinks Frommel's failures were due to suturing the uterosacral ligaments to the lateral pelvic fascia, thereby sacrificing their retrohensile action.

In 1902 and 1903, Bishop, of Manchester, England, described another method of shortening the uterosacral ligaments by the abdominal route. With the patient in the Trendelenburg position, the intestines out of pelvis and the uterus held forward by two ligature tractors, each one embracing the tube and round ligament of each side, a special sound was introduced by an assistant into the vagina and made to push up the posterior fornix. Sutures were introduced on either side of the peak and sutured to the periosteum of the sacrum. He complemented this with shortening the round ligaments by Olshausen's method.

In 1903 Stoner plicated the uterosacral ligaments by the abdominal route. He used a tenaculum to hold the fundus forward. After inserting the ligatures into the uterosacral ligaments he swabbed the peritoneal surface to be approximated with 1/500 bichloride of mercury solution.

In 1912, Noble described a simplified technique for shortening the uterosacral ligaments. He says:

"The functions of the uterosacral ligaments, therefore are to preserve the balance and to equalize the strain in front and behind the uterus, to hold the cervix and vagina upwards and backward, maintaining the normal size of Douglas pouch and to turn the body and fundus of the uterus forward in such a way that intraabdomnial pressure is exerted upon its posterior surface with a tendency to antevert the organ. The mechanical principle is identical with that employed in use of the pessary. No one now maintains the idea that the upper arm of the pessary holds the uterus in place by making pressure upon the posterior wall of the uterus, but all agree that its mechanical function is the one above mentioned—that is, to hold the vagina and neck of the uterus upward and backward producing the effect above mentioned."

"The mechanical principle in surgical repair indictates a reversal of this process in addition to correction of lesions of the cervix, vagina, and floor of the pelvis, that is to say, turn the fundus forward and move the pivotal point posterior to the centre of gravity of the uterus.

"This is best accomplished by shortening the uterosacral ligaments, reducing the size of Douglas' pouch and ligament suspension of the uterus. The former is done with a continuous catgut suture, closing the sides and anterior surfaces of Douglas pouch by folding peritoneum upon itself behind the uterus until the pouch is reduced to normal. The next step of shortening the uterosacral ligaments, I have simplified by putting into effect the single suture approximation of three points: one on the anterior surface of the cervix, the other two on either side of Douglas' pouch at the junction of the posterior and middle third of the uterosacral ligaments.

"If there is much elongation of ligaments division of them into thirds will not place the suture at the proper point. In such instance it may be introduced about the middle of the posterior half of the ligament. In other words, a point should be selected far enough anterior to the sacrum to bring the two ligaments together in front of the rectum in such a way as to produce a normal size retrouterine pouch. A long pair of forceps picks up the ligament at the point indicated, and brings it upward as near the abdominal incision as it can be turned to facilitate manipulation. A heavy kangaroo suture in a stout curved needle is passed thru the ligaments embracing quite a quantity of tissue. The ligament is then released, and the needle passed thru the posterior wall of the cervix a little below the internal os. The other ligament is then picked up and the needle passed behind it as above described. In tieing the sutures, the three points are approximated at a common centre. The effect is to reduce the size of Douglas' pouch and to pull the cervix uteri backward to its normal position.

"When there is much prolapse of the uterus or excessive elongation of the uterosacral ligaments, tieing the suture mentioned will cause the anterior part of these ligaments to fall into folds on either side of the cervix at the base of the broad ligament, and, if the openings are large enough to admit the finger, the folds should be gathered up and one turned over the other (behind the uterus), and each sutured to the opposite uterosacral ligament.

"To prevent retroversion the body of the uterus is held forward by shortening the round ligaments. For this purpose I prefer an extra-peritoneal operation, embedding the ligaments between the layers of the aponeurosis anterior to the recti muscles."

Culbertson; in his recent work on Pelvic Surgery, has this to say:

"Shortening of the uterosacral ligaments is indicated wherever surgical treatment of uterine displacement may be properly applied, and in a certain proportion of cases, this should be regarded as even more essential than shortening of the round ligaments alone. The uterosacral ligaments are tensors of the anterior vaginal wall and of the vesicovaginal fascia, as emphasized by Nyulasy, and their curtailment lessens cystocele and prolapsus uteri and, in the erect position, helps to hold up the sagging organ. For slight cases of prolapsus the operation for retroflexion with shortening of the uterosacral is often adequate. According to Blair Bell, reconstruction of the posterior segment of the pelvic floor is a part of the surgical treatment of prolapse of the uterus and vagina and consists essentially in the obliteration of the pouch of Douglas by approximating the uterosacral ligaments in the midline by transverse sutures.

In most congenital retroversions of the uterus, shortening of the uterosacral ligaments is all that is necessary, though I do not advocate operating upon such cases for this purpose alone. Another indication is the retroflexed gravid uterus that is adherent. Operative interference on the gravid uterus is generally not indicated as the adhesions soften and relax under influence of gestation so that the uterus may be frequently elevated and enlarged upward by mechanical means. In unusual instances, however the uterus, fixed by firm adhesions posteriorly, may become adherent and require operative interference. Later, after freeing the adhesions, plication of the uterosacral ligaments is sufficient. Finally Graves and Pemberton favor the curtailment of the uterosacral ligament with or without suspension of the fundus."

After working for several years with such instruments as I could find on the market, and with a varying technique, all of which seemed awkward in my hands, I finally had some special instruments made that greatly simplify the work and lend themselves to an improved technique. I am prejudiced against a tenaculum or sutures for holding the uterus forward, because they injure normal structures and leave raw surfaces for the development of adhesions, so I had a special retractor made that is pear shaped to fit over the body of the uterus, and with a stem on it to go between the uterosacral ligaments to assist in putting them on a stretch.

When the uterosacral ligaments are thus stretched the adjoining peritoneum is also flattened out with the ligament, so the ordinary long clamp or forceps will not satisfactorily pick up the ligaments. For that purpose I had made four long Allis tissue forceps, two for each side. As the sutures have to be deeply introduced, none of the needle holders that I could find was sufficiently long so that the hand would not more or less obstruct the view, therefore I had made a Mayo needle holder 10 inches long.

The technique I have also modified somewhat, keeping in mind that the stretching of the ligaments takes places in the middle and not at the ends.

TECHNIQUE

The patient is placed in the Trendelenburg position, bowels and omentum packed back, the rectum further gently drawn up and packed back with an additional pack. This is very important as it is essential, in correcting a sagging rectum, to raise the rectum so that the part of the rectum receiving the muscular fibers from the ligaments will be restored to the proper plane.

The retractor is placed behind the uterus with the tip between the uterosacral ligaments and pulled forward, putting the ligaments on the stretch.

They are further localized by the finger. The ligaments are picked up with the forceps—two to each side, the anterior forcep about one fourth distance from the cervix, and the posterior about two-thirds distance.

The ligament of one side is plicated so that one fold comes behind the cervix — with a short, straight needle (Emmet's) threaded with Kangaroo tendon or No. 3 40-day chromacized catgut, one or two mattress sutures are so introduced that when tied the knots will be on the inner side. Forceps are put on the ends of the sutures and the other ligament similarly sutured. After the sutures are introduced in both ligaments, they are tied.

This plication strengthens the weakest part of the ligaments. Two sutures of 40-day chromacized catgut on a full curved needle are passed through the anterior folds of the ligaments and the posterior part of the cervix on a line with the attachment of the ligaments and tied.

With 10 or 20-day No. 1 chromacized or formalized catgut on a full curved needle the edges of the ligaments are picked up and also the peritoneum in the cul-de-sac in several places and tied, practically obliterating the sac. In cases of marked stretching of the ligaments it is necessary to take one or more additional mattress sutures. To obtain the best results it is necessary to over correct the normal position of the cervix, that is make the cul-de-sac smaller than normal, leaving just space for a full rectum. In many cases it is advisable to shorten the round ligaments but when that is done care must be taken to not make them taut; First, they are not supposed to be; second, it would prevent the normal rise and fall of the fundus with the filling and emptying of the bladder, and third, it would place an additional, an unnecessary, and far from beneficial strain on the uterosacral sutures.

The utilization of these ligaments in holding up the vault of the vagina following a hysterectomy is just as important as in reposition operations.

1. Bovee.
2. Bishop.
3. Stoner.
4. Noble.
5. Thelander, C. A.: "Restoration of Utero-Sacral Ligaments in Prolapse," Medical Journal, Australia.
6. Culbertson.
7. Byford.

DENUCE'S METHOD OF REDUCTION OF CONGENITAL DISLOCATION OF THE HIP WITH REPORT OF CASES

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The rather striking success achieved by Professor Maurice Denucé of Bordeaux in the reduction of congenital dislocation of the hip came under the observation of several American doctors during the war. They reported these results in a general way upon their return to this country, and the reports were so rosy that they were received with a high degree of skepticism by most of the orthopedists.

In 1921 a thesis appeared, written by Dr. Edouard Papin of Bordeaux on the treatment of congenital dislocation of the hip as carried out by Prof. Denucé, and this again gave such a high percentage of surprisingly excellent end-results that Dr. Z. B. Adams of Boston decided to go to Bordeaux and investigate. Dr. Adams is a person who is not easily stampeded but when he returned later in that same year he was so enthusiastic and he succeeded so well in the reduction of several hips which had defied attempts at reduction that even the conservative group of orthopedists in Boston became interested. Adams gave an excellent report of this method before the 1922 meeting of the American Orthopedic Association and the details given here are taken from his report published in July of that year.

Prof. Denucé, whose death was recently noted in the literature, was for many years Professor of Children's Surgery at the University of Bordeaux. At the outbreak of the war, at the age of 65 years, he was placed in charge of all surgical cases at the Children's Hospital in Bordeaux—an institution, by the way, which was founded several years before the United States of America came into existence.

From the time of his assuming his duties until Adams' visit in 1921 he had reduced over 900 dislocations of the hip with but few failures and had kept excellent records, x-rays and follow-up notes.

The reduction is preceded by a stretching of the adductors. This is done by stroking the adductors with the soft part of the palm of the hand from the pelvis downward in the long axis of the thigh, the skin being protected with plenty of powder. The stroking is most gentle when compared with the violent stretching which was used in previous methods, and Denucé lays great stress upon the point that no violence or force are used. As the adductors are stretched—over a period of 15 to 30 minutes—the thigh is slowly brot to a position of right angle flexion and full abduction so that it will lie in the plane of the table. The thigh is now flexed fully and firmly upon the abdominal wall with the flexed knee pointing in the direction of the opposite axilla, and pressure is exerted upon the knee in the long axis of the femur. The fingers of the operator's other hand are placed under and around the head, neck and trochanter, lifting up, and pressing the muscles in between the head and the side of the pelvis. The knee is carried across the body to its own side, down to the table, and into complete abduction, the fingers behind the head lifting firmly all the time, the circumduction being done slowly and steadily, and the pelvis being held firmly by the assistant. There is seldom any click or shock as the head enters the acetabulum, rather it slowly comes forward and lodges. As some one suggested, it "oozes" in.

After reduction the hip is tested for stability and put up in plaster in the most suitable position, this being in the ordinary case what Prof. Denucé calls "ninety-ninety"—ninety degrees flexion and ninety degrees abduction. The plaster extends from the nipple line to just above the ankle.

After the plaster has set, the child is sent home with instructions as to keeping the plaster clean, and is kept not in bed but upon a flat, firmly padded table. There is no trauma, no ecchymosis, no pain or swelling of the foot, providing the child is young. At the end of three months if the head of the femur can be felt pushed forward into the groin, the plaster is cut off just above the knee, allowing freedom of the leg. Three months later the plaster is split and the child bandaged into the posterior half. During the next two or three weeks heat is applied for an hour daily by means of a hot sand bag from the knee to the hip with the child lying in the plaster. After the heating the child is instructed to lift the thigh forward, straighten the knee and rock the lower leg. General heliotherapy is also given, increasing gradually until the child has one and a half hours daily.

After two or three weeks the plaster is removed entirely during the periods of exercise, the child lying on the firmly padded table. Exercise is given twice daily for half-hour periods—no passive motion, but active motions in flexion, extension and rotation both while lying upon the back and upon the face. After about one month the child is given additional daily exercise in a deep tank of strong salt solution for periods increasing from 10 to 30 minutes. The buoyancy of the water is so great that the child can kick its legs in all directions without sinking or touching the bottom of the tank. After one month the baths are given every day for two months more, then there is an interval of one month followed by another course of baths every other day for two months. During all this time the heliotherapy, local heat with the sand bag, and exercises on the table are continued. No weight-bearing is permitted until the center of ossification of the upper epiphysis of the femur is seen to have begun to increase markedly in size, usually three to five months after removal of the plaster. Weight-bearing is begun by very short intervals of standing and walking, gradually increasing. The exercises, local heat, and baths are continued for many months, thirty-one months being recorded in some cases. The function is almost perfect in all of the cases.

This is an outline of Prof. Denucé's procedure as given by Adams. There are many excellent points, among which may be emphasized the lack of trauma, the rather early physiotherapy, the x-ray determination of the time to commence weight-bearing, and of course the end-results. It would seem perhaps that so prolonged a course of physiotherapy might not always be necessary, but in view of the unusually perfect functional results in so large a series of cases any suggestions as to alterations in the method would be presumptous.

I wish to report briefly six cases in which reduction was accomplished by this method, altho on account of home conditions and the lack of tank facilities the after treatment was not followed as outlined.

The ages varied from 14 months to 5 years; there were 2 boys and 4 girls; the left hip was involved in 4 cases, the right in 1, and both in one. In 3 cases the first manipulation was successful, one case required two, and in 2 cases three were necessary before the hip remained in place. The technique as described was followed in all cases.

In one case, C. C., the x-ray showed the head of the femur in place after the application of the plaster but at the end of 5 months it slipped out, due probably to a position of insufficient abduction. After this length of time the femur is apt to be so brittle from atrophy of disuse that it is easily fractured during manipulation, so the child was allowed to run around for 2 months, after which the dislocation was again reduced and at present is apparently remaining.

In the bilateral case, B. J., reduction was accomplished quite easily, but the left hip seemed rather unstable and the x-ray the next day showed both heads below the acetabula. A few days later reduction was again done; the plasters were changed at intervals of two or three months, the angle of abduction being gradually reduced; but after remaining in place for over seven months the right hip slipped out. The left hip is solidly in place, and rather than endanger it, and also to give time for the bone atrophy of disuse to be overcome by walking, another reduction will not be done for about six months.

The case, C. H., is most interesting of all. It was seen in consultation with Dr. J. W. Richardson at the age of one week because of the condition of the right knee. At birth the knee was hyperextended upon the thigh above a right angle, was slightly subluxated, could not be forced to a position within 30° of straight, and there was a congenital absence of the patella.

A brace was devised which gradually brought the knee to a position of about 15° flexion. On account of our attention being focused upon the deformity of the knee the fact that there was also a congenital dislocation of the hip was not discovered until about this time, the child being then about one year old.

An attempt at reduction was made at the age of 14 months and the head of the femur slipped into the acetabulum very nicely. However, on account of the fact that the knee could not be flexed it was impossible to maintain the necessary degree of rotation, the leg rotating inside the plaster and turning the head out of the acetabulum, no matter what the direction of the femur. A second attempt at reduction one week later gave the same result. This made necessary a period of three months of active stretching and flexion by means of plaster to bring the knee into a position of sufficient flexion to maintain femur rotation. After this was gained the dislocation was again reduced and the head remained in place. The plaster was changed at intervals, reducing the angle of abduction and flexion. The flexion of the knee, however, was maintained, on the theory that the constant stretching and action of the quadriceps tendon across the condyles might stimulate the formation of the sesamoid patella; and when the child was 26 months old, the flexion having been constantly maintained for 10 months, a soft but distinct little patella could be felt. This has developed well and now, at the age of 2½ years there is no tendency to hyperextension or subluxation of the knee.

The child walked well in a short spica plaster for three months and since the hip was stable it was felt that the plaster could be omitted. It was removed, the hip found to be fairly freely movable and firmly lodged in the acetabulum, and the child was dressed; but as she started to walk out of the room she sank to the floor crying with pain and it was found that the weight of the body upon the unsupported femur had caused a fracture at the middle of the shaft. There was no displacement. Plaster was re-applied, bivalved, physiotherapy started three days later, and now five weeks later there is good callus formation, and the head is still in place.

The other three cases were not unusual in any respect, two being at present in plaster but walking very well, and the other having perfect function.

In these six cases Denucé's method has been used eleven times and at present the outlook would indicate that the results will be excellent. The cases are all young and possibly the end-results would have been good under any method but the ease of reduction and the absence of trauma and discomfort have been so striking as to be worthy of more than passing note.

In older children, and also perhaps in these, a closer adherence to Prof. Denucé's after treatment will probably improve the stability of function of the hip and should increase our percentage of perfect end-results.

ECZEMAS OF INFANCY AND CHILDHOOD*

Gershom Closson, M.D.
SEATTLE, WASH.

A physician is quoted as having said, "The successful treatment of eczema is the most searching test of a good physician."

This medical aphorism will probably remain unchalleneged for some years to come. One might add that any physician, good, bad, or indifferent, who has met with reasonable success in treating the eczemas, has experienced a "searching test."

It is a test of many things not conferred upon him with his degree of doctor of medicine, not the least of which is the amount of patience and perseverance he will need in assuming the care of these cases.

While it is true the eczemas of early life more readily respond to treatment than those types appearing in later years, eczema is eczema wherever and whenever seen. It's successful treatment often implies qualifications the good doctor will not find in medical tomes. Soon will he discover the need of consideration and tact as, in addition to the infant, he may have to minister to a worried mother, a retinue of relatives and possibly, the family physician.

The relative importance of this subject is bound up in the common affairs of life, the happiness of a home and the contentment of a mother's heart. Whatever, in this little circle, brings disfigurement, discomfort and pain to the Jewels of Womanhood, the children, assumes importance out of proportion to its actual seriousness.

The effects of those who can bring relief to these small sufferers, or merely offer suggestions directed to their betterment, must elicit our interest and co-operation.

All eczemas are inflammations of the skin, but far from all inflammatory conditions of the skin are eczemas. Even in infancy the skin responds to constitutional disturbances by becoming the seat of inflammation and is quick to react to irritants, the pictures of which resemble the protean eczemas.

Diagnosis is usually readily made and the determination of the type of dermatitis and its grade is comparatively easy. The results to be expected from treatment and the nature of the same depend entirely upon the character of the eczema so that a brief consideration of the several types is proper.

In infancy there are two divisions of the eczemas; those responding satisfactorily to treatment wherein you are justified in giving a good prognosis. They are the more common. Then there is the second type of the disease, resistant to all efforts to effect a cure regardless of methods or the skill employed. These obstinate cases are distinguished, as a rule, by their history of onset and soon declare their sluggish nature by failure to improve under any form of treatment.

This chronic, non-responsive form usually appears at birth, or very shortly after, as an erythematous or papular type of an eczematous dermatitis, or combinations of the lesional varieties of eczema, and persists during the first two or three years of infancy. With periods of improvement it is very apt to continue thruout the balance of the individual's life.

Fortunately our concern is chiefly with the first class; the varieties of acute and sub-acute eczemas, amenable to treatment and, when once cured, having little tendency to return.

These are the acute eczematous forms of dermatitis, the sub-acute and chronic stages of the same process, the papular and the eczema madidans or eczema rubrum of infancy. This latter and the squamous eczema, sometimes observed, are constructive types frequently following an acute eczematous dermatitis.

There are other inflammations of the infant's skin that should be mentioned, even tho not strictly eczematous, because of their common occurrence, and because they are often engrafted upon primary types. The term, mixed types, plainly defines their pathology. The most common is the eczematous impetigo, a condition where some form of an eczema has been altered by scratching or infected by the presence of a not uncommon association of pediculi and scabies. Under this head comes the intertrigo of infancy, occupying opposing surfaces or, where moisture persists, made eczemous by these factors. The so-called "diaper eczema" is of this nature.

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* Read before the King County Medical Society, October 27, 1924.

These eczemas present themselves for treatment in varying stages of inflammation, degrees of moisture or dry, as the case may be and involve most often the face and scalp. The buttocks are also a common site as well as localized areas on the body. Seldom in infancy is an eczema generally distributed and, if so, it is suggestive of that variety which responds poorly to treatment.

I believe the majority of cases of infantile eczema arise from some internal cause, a reflection of disturbed metabolism, resulting often in digestive disturbances or abnormalities of secretion and excretion. The former are relatively rare altho it should be recalled there are icthyotic conditions of the skin in infancy wherein the thyroid is involved.

Disorders of digestion comprise a large proportion of cases in which there is an associated eczema and this etiological factor extends well into childhood. So universally is this accepted by the profession that a considerable number of pediatrists claim the eczemas of infancy are purely a question of feeding and would dispense with the dermatologist altogether. This is an extreme view. Most problems are more easily solved by two heads than one, and eczemas of any type, or afflicting any age, are sufficiently difficult to manage to justify consultation.

The modification of a diet alone will sometimes cure an eczema of infancy. More often it will not. Then the dermatologist can hardly be dispensed with.

Crary believes "The cause of eczema in infants, the cause of the illness of which the eczema is a symptom in infants being so intimately connected with faulty feeding, it seems to be the duty of the pediatrist to assume direct control of the case and of the dermatologist to assume the position of consultant."

The best results can be looked for in those cases where the pediatrist or the family physician has in charge the dietetic and constitutional abnormalities needing correction, leaving all external medication and its application to the dermatologist.

In the very young the problem should not be complicated. You are treating a breast or bottle fed baby and the proper control of diet is more easily brought about than later in chilhood when a mixed diet is used. White says of these cases on an all-milk diet, "Proper feeding, as indicated by food tests and stool examination, is capable in very young children, of producing a cure or paving the way for a cure in a decided majority of cases."

To what extent does the nature of the food given and its fate in the body govern the production of the eczemas of infancy or, by its modification, contribute to their recovery? Is the profession agreed that the diet of the infant is one of the principal causes of the eczemas seen so commonly at this age?

Very recently an interesting article has appeared bearing directly on the subject of metabolism in infancy and the conclusions reached by the investigators, concerned chiefly with the variations in the fat and sugar content of the milk of bottle fed babies one year of age and under, were that they "could see no definite change in the eczema by the addition or subtraction of fat or sugar within certain limits, and the eczema cleared up just as readily as in those cases in which these elements had been withdrawn."

Stuart takes the opposite stand. He says "it is generally admitted nutrition does influence the course of infantile eczema, but there is less agreement as to the important factors."

Clinical experience finds many of us occupying a middle ground well expressed by Bishop, who reaches an opinion that "diet in diseases (these eczemas of infancy), depends upon a study, not so much of the food, as upon the reaction of the patient to the food."

Both are necessary. The eczema present, in many instances, is sufficient evidence of the little patient's reaction to the food and it is about as essential that this should be given as much consideration as the diet. They, alone, are but a part of a problem the whole of which must be solved to effect a cure.

It is not within the province of this article to discuss the relative merits, or attempt to draw conclusions from these conflicting deductions concerning the etiology, or the influence of diet on the eczemas of infancy, but rathes to ask your attention to a brief review of forty-six cases of this affliction recently observed in dispensary and private practice.

You may argue this is not a formidable number in the agreegate from which to draw data to support anything new or radical relative to diet or medication. It is not; neither are you to be burdened with more formulae; rather, are you to be asked to note the simplicity and uniformity of the conduct of these cases made possible by the use of ointments of crude coal tar.

Of these forty-six types of eczema, twenty-eight, or 60 per cent, were different grades of acute eczematous dermatitis—the vesico-papular type of the text books. Of the remaining eighteen, six were severe cases of eczema rubrum of the face and scalp. Five were complicated with pediculi and scabies (the infectious eczematoid dermatitis). Three, the papulo-squamous, and one case, existing for five years, closely resembled a lichen urticatous.

Seventy-four per cent of this small number were of the moist variety of the infantile eczemas; the type most responsive to treatment and largely due, as most contend, to disorders in the metabolism of fats.

The babies with an infectious eczematoid dermatitis were first cleared up of their complications, and then external applications limited to the ointment of crude coal tar combined, when necessary, with certain modifications of diet.

In private practice a routine stool examination was made in every instance before beginning treatment. This generally confirms your clinical observation regarding the character of the intestinal fault upon noting the moist eczemas are associated with a fat indigestion. In the dry form we are generally dealing with a starch indigestion, but it is well to keep in mind the occasional icthyotic skin previously mentioned. These later are chronic types with a pronounced tendency to relapse. Protein indigestion is comparatively rare in infancy; appears later with the mixed diets, and these eczemas are exceedingly stubborn and slow to respond to any form of treatment.

Always it has been observed that the constitutional extremes in infancy have fallen victims, for one reason or another, to the eczemas. The over nourished; the fat, chubby baby, and the marasmatic; both present a cutaneous field the soil of which seems prepared for the development and growth of an eczematoid eruption.

These extreme types of nutritional imbalance are essentially the ones where judicious care in the supervision and modification of diet becomes of great importance in bringing about relief and cure, tho little else be done. These are the cases where the intelligent and wholehearted co-operation of all concerned is indispensable and results obtained are hardly less spectacular than witnessed in those patients with eczema rubrum where the ointment of crude coal tar is properly used.

The use of the latter has revolutionized the treatment of these cases, once the bane of pediatrist and specialist. Of some of the lesser grades of eczematoid dermatitis often met with the simple lotions and mild ointments are of service. In the intertrigos the old "white wash" is always to be mopped on; and in the impetiginous eczemas behind the ears, the application of the crude coal tar ointment made up with unguentum aquae rosae, is ideal.

Laymen are strangely prone to look upon specialists as beings more of mind than of heart in distinction to their fellow creatures in other pursuits; crediting them with analyzing patients as "cases" rather than individuals, sick and in the need of sympathy.

More often the men engaged in specialties have "done their bit" in general medicine, a field that broadens, not narrows, the medical heart and mind. An experience mellowing the attitude toward all the ills of mankind and augmenting sympathy, needed ofttimes more than the material measures employed.

Extend to the mothers of the infants entrusted to your care all the solicitude these little sufferers deserve, mindful of the fact they are unable to express their gratitude tho well able to register their disapproval.

In our profession the nearest and the dearest to the mother's heart is the family doctor; *her* physician who was with her during all the crucial hours of motherhood; that wonderful period of her life when the advent of a new life far outweighed the worthiness of her own.

In most instances this is the man who has called upon you for help; who has vouched for your skill. He is the captain of the ship; you, the pilot, temporarily taken aboard that a dangerous shoal be avoided and port safely made.

SUMMARY

(1) The importance of considering the probability of metabolic disturbances the greatest single factor in the production and the maintenance of the eczemas of infancy.

(2) The immeasurable superiority of the proper

use of ointments of crude coal tar, after the formulae of White, in the control and cure of these conditions as compared with former methods.

(3) The value and necessity of "team work" on the part of all concerned.

(See Reprints for Bibliography)

FOREIGN CORRESPONDENCE

Prague, Oct. 25, 1924.

Northwest Medicine.
Mr. Editor:

I take the liberty of writing you about things abroad appertaining to medicine. I went to Vienna last August and found there about 165 American physicians doing post-graduate work. As usual most of the men were chiefly interested in ear, eye, nose and throat work.

Some of these latter are going to Budapest because there is not enough operative work in Wien.

At first I found no doctor in Vienna from Washington, then one came from Ellensberg (I forget his name), and later, R. Matson from Portland.

The rooms of the A. M. A. in Vienna have been moved to the corner of Spital and Lazarettgasse. The quarters are not large enough but none better can be secured at present.

Vienna seems to be retrogressing in every way except in medicine. The fees of instructors in medicine have been raised so much that it will in time make Vienna too expensive. The instruction seems to have degenerated into a business and everyone seems to like to overcharge the American. Many of the Americans are disgusted since the medical teachers are talking of raising the fees again. We are not liked by the Austrians. This is the opinion of all Americans who were in Vienna while I was there.

The cheapest room one can get, without running water or fuel, costs $18.00 a month. Everything considered, the living is cheaper than in the United States. I pay $2.20 a day for room and board, eating in restaurants.

The teachers are capable but the best men do not teach, except in German in the regular university courses, as Renkebach, Kovaco, Chvostek, etc. There are too many men taking the courses and one finds it too expensive to take private courses.

I next went to Prague the capital of Czechoslovakia. The Czechs are equal in ability to the Austrians but write mostly in French (which school they follow) and in German medical journals, and we therefore do not hear much of their work in the States. I was received with open arms and was invited to join the Klinik as an externe. Prague is the largest university center of the world today. I decided to join the klinik of Professor Peluar and devote most of my time to electrocardiography under a very capable gentlemen, Docent B. Prusik.

The reading of electrocardiographic tracings is a little difficult but I am slowly progressing. It is a delight to listen to men here discussing medicine. They quote English (MacKensie, Lewis) French, German and American authorities with equal fluency and in a most off hand manner; it is truly wonderful. Most of the teachers speak English, as Docent Prusik, who studied with Lewis, and more of them read it. All of them speak perfect German.

I would advise anyone wishing to study internal medicine or surgery to come to Prague. Especially for cardiology. One can get 30 hours instruction for $40.00, and the material is unlimited, since patients come from all over Bohemia.

Living conditions are about the same as in Vienna but the cooking is better. The Czechs are very friendly toward Americans, American methods and institutions.

I almost forgot to mention surgery! General, abdominal, ear, eye, nose and throat surgery; one can get all the operative work here under any of numerous teachers. All branches are taught in English. A surgeon connected with one of our American universities tells me he sees better surgery done here than in Vienna.

I believe on the whole one can get as good medical work in the States, probably better in metabolism and gastroenterology, but he will have to pay a great deal more. I will continue in cardiology another month and stay in Europe for another year. I would be glad to send any information to anyone interested in medical work in Prague.

With very best wishes, respectfully yours,

A. Drtina.

Address: Ceskakubice, Czechoslavakia.

Editorial Note: Dr. Drtina is a highly intelligent American student of medicine and an able practitioner. He was interne at the King County Hospital some years ago and on the tuberculosis board at Camp Lewis. Later he did medical work in Alaska for the government. He took a previous post-graduate trip in Europe after the war. He intends to settle in Seattle eventually as an internist—if he ever finds time to practice. There will be no doubt as to his super-training.

NORTHWEST MEDICINE
The Journal of the State Medical Associations of Oregon, Washington, Idaho and Montana
Devoted to the interests of the Medical Profession of the Pacific Northwest
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DECEMBER, 1924

EDITORIAL

A PROFITABLE SURGICAL ASSEMBLY

In attendance, personnel and program the annual Clinical Congress of the American College of Surgeons is among the outstanding and choicest gatherings of the medical profession of our land. That held in New York in October at the Waldorf-Astoria hotel attracted to the metropolis leading surgeons from all the states, Canada, Central and South America, as well as Great Britain and Europe. Nature was propitious in the provision of ideal mild weather, with cloudless skies, while one's artistic instincts were gratified by the riot of color displayed on every hand in autumnal vegetation.

The clinical features of the Congress were characterized by a wealth of material almost bewildering, for nowhere else can be presented such a multiplicity of hospitals, dealing with all phases of human ailments. The courtesy and assistance extended by the medical profession to all visitors served to dispel the oft-quoted tradition of coldness and self-centered smugness of the satisfied New Yorker. One was compelled, however, to exercise self-restraint and, owing to the limitation of possibilities for the individual, to select a few of the manifold attractions and regretfully pass many more. In extending to the assembly an invitation to Brooklyn day, the chairman of the committee elaborated on the multiplicity of professional features of that borough and the numberless sights of Greater New York, stating that for the Democratic Convention a guide book was prepared for sightseeing that filled six hundred pages. How little of such pabulum could one hope to digest in a week's time.

The special conference of the meeting pertained to the hospital question. Standardization was discussed in all its aspects, relative to general efficiency, records, the staff both surgical and medical, and its conferences, as well as other features. One from the Northwest was impressed by the fact that, while these problems may be new to the profession of some states, they have been thoroly thrashed out in his section and most of the suggestions offered have been subjected to the acid test of practical application in the hospitals of some of the cities in that region. The principles enunciated were approved as promoting higher standards for hospitals and conservation of the welfare of patients, the latter being the basic motive for which these institutions exist. That this problem is not confined to the United States was evidenced by the presentation of papers on some of its aspects by representatives from other countries.

Papers at the evening sessions considered numerous surgical subjects. Apparently surgical attacks on the sympathetic nervous system are much in vogue these days, since more attention was paid to this than any other one subject. Four papers were read on sympathectomy for spastic paralysis and circulatory diseases of the extremities. Discussion indicated that belief in the efficiency of this procedure for the latter condition is not unanimous. In the address of the retiring president Dr. Ochsner declared his belief in the discovery of the micrococcus which is the causative factor in the production of cancer. He is confident that all necessary conditions have been met for proof of this claim. The ordinary observer, however, will probably continue to reserve his opinion, in view of the many similar discoveries of recent years, with the hope that ere long some one of them may be proven beyond question. After meeting distinguished members of the profession and taking advantage of medical and surgical privileges of a great medical center, one feels that the necessary effort for their attainment is worth while as often as it can be accomplished.

SEEING THE GALL BLADDER

One of the classical sayings of W. J. Mayo in reference to mistakes in abdominal diagnosis used to be "the only reason the doctor made a mistake in this case was on account of the presence of the abdominal wall."

So it is with the gall bladder. If we could only see it most of the mistakes might be avoided. But not by any means invariably so for not rarely the surgeon overlooks the gall bladder inflammation when he not only sees the gall bladder but actually has it in his hand. Chronic cholecystitis is by far the most common of all chronic disorders of digestion. In 1921 the writer tried to offer some suggestions in the way of diagnosis of chronic cholecystitis and advanced the dictum that the disease more often occurred in *females, fat, forty and flatulent*. (*Northwest Medicine, June,* 1921.)

But in the case of young thin males this would not be a valuable guide. The reason why diagnosis is so difficult in many instances lies in the variety of the symptomatology, and the long periods of latency.

Therefore any positive sign of chronic cholecystitis is an invaluable asset. The new test of Graham and Cole for visualization of the gall bladder by the intravenous injection in two doses, one half hour apart, of the sodium salt of tetrabromphenolphthalein (5½ gms. in 40 c.c. of distilled water), appears to offer hope that such a test has been discovered.

The writer has so far tried this method in seven patients at the King County Hospital, checked by subsequent operation.

The chemical is used to render the liver and gall bladder opaque to the x-ray during its elimination. Three factors are essential for the success of the test: 1. That the function of the liver is sufficiently good to allow the secretion of the chemical in the bile. 2. That the cystic duct is patent in order that the chemical may enter the gall bladder. 3. That the concentrating function of the gall bladder permits concentration of the chemical in it.

The shadow of the liver is first seen on x-ray films after the injection of the chemical and before that of the gall bladder. This may prove a valuable functional test of the liver, depending on the time required for appearance of the liver shadow.

In the beginning the calcium, instead of the sodium salt, was injected and this led to dizziness, nausea, headache and vomiting in patients so that, in some clinics, the use of the test was stopped. Now, with the sodium salt, we have not had any discomfort produced in any of our patients.

One of the chief drawbacks that we have experienced, and it may render the test futile, is the frequent presence of gas in the bowels. This is of course the most common symptom of gall bladder disease. But it is greatly aggravated by giving a cathartic previous to the injection of the tetrabromphenolphthalein, so that a purge should always be omitted before this test.

The test should cause the gall bladder to be silhouetted in shadow on the x-ray film, and therefore picture its size and shape, unless the cystic duct is not patent, when the gall bladder will not appear at all. It is true that the gall bladder is not brought out with the definition of bone but in most cases it is distinctly visible.

Irregularity of outline, especially of the inner wall of the gall bladder, is a pretty certain indication of adhesions and therefore cholecystitis, and this we have checked by operation. At the present time this finding seems to be the most valuable for diagnostic purposes.

The test is evidently one that will require perhaps years to demonstrate its precise value and to show its possible defects. We have already been misled into making a diagnosis of gall stones in two patients with cholecystitis in whom no stones were found at operation. It is probable that defects in the old screens were responsible for this mistake. Gall stones have been diagnosed by the less opaque areas in the gall bladder after the performance of the test.

The absence of any shadow of the gall bladder is almost a certain sign of cholecystitis with obstruction of the cystic duct.

We expect to detail in the future the results of our work in this matter and would be glad to receive patients at the hospital for this examination. The chemical used in the test is soon to be put at the command of the medical profession by the Mallingkrodt Chemical Works, St. Louis, and in solution in ampules ready for use. For details of the test the reader is referred to Annals of Surgery, Sept. 1924, p. 473.

On the whole the visualization of the gall bladder by the sodium salt of tetrabromphenolphthalein, introduced by Graham and Cole, appears to be one of the distinct and important advances in medical diagnosis whereby accuracy is gradually superseding guesswork. K. W.

SOME ERRORS IN THE THERAPEUTIC USE OF DIGITALIS

From the introduction of digitalis into medicine in 1785 by Withering, who regarded the drug as a diuretic, there has been an abundance of investigative work brought forward, yet the use of this drug is still empiric in the great majority of cases.

While there are still experimental pharmacologists who speak of the diuretic action of this drug, no one should use this drug as a diuretic in man. Withering's report was based on the belief that its therapeutic value lay in its diuretic action; Gottlieb, the German pharmacologist, still believes his experimental evidence is transferable to man. Mackenzie, Cushney, Christian, Hatcher, Sollman and Eggleston all conclude that its diuretic action is dependent solely upon its cardio-tonic action in the presence of edema. So much in condemnation of its use as a diuretic in edema of renal origin or in renal insufficiency without edema.

The second great error in the use of digitalis is in the matter of dosage. In spite of the fact that Eggleston made a plea for substantially larger dosage of digitalis in 1915, we still see more doses of five to ten minims than those measured in the drams necessary to obtain digitalization. Roughly, Eggleston advises the use of as many cubic centimeters of tincture of digitalis as are represented by 10 per cent of the body weight of the patient in pounds; more accurately, 0.15 c.c. for each pound of body weight, to be followed by a daily maintenance dosage of twenty minims, the amount excreted daily as nearly as experiment will tell.

The third error is the use of digitalis in two types of tachycardia with normal mechanisms and probably of constitutional origin. They are effort syndrome and hyperthyroidism. Parkinson made an extensive study of the former in an English Heart Hospital and demonstrated its utter worthlessness in this type of tachycardia. Cohn, Fulton and many other investigators have shown that it does not slow the heart of toxic goitre, unless there be auricular fibrillation.

A fourth error is becoming less prevalent, namely, that digitalis increases blood pressure. An abundance of clinical evidence has been accumulated that shows that digitalis does not increase a hypertension, and that one type, Sahli's *"Hochdruckstaung"* (high pressure stasis) is actually reduced by digitalization.

A fifth error is to give digitalis intravenously, when it has produced nausea and vomiting, in the belief that this action is on the gastric mucosa. Hatcher and Weiss have shown that this action is upon the vomiting center in the medulla, as a result of impulses reaching it from the heart itself. It is a "protective reflex" and is a toxic manifestation. The lesson is obvious.

With such large dosage as is recommended by Eggleston it is well to know the toxic dose of this drug to prevent a sixth error. Sollman, who has studied the subject, gives the minimal lethal dose as 2.5 mgs. of the leaves or 25 c.c. of the tincture, but states that recovery has occurred from 4.0 gms. of the leaves or 40 c.c. of the tincture. In view of the fact that Eggleston's method will produce a dose of 22.5 c.c. of the tincture in a 150 pound man, it behooves one to administer the drug by the divided dose method under close observation, especially if the patient is heavier than 150 pounds.

A seventh point not clearly understood is the admonition not to use strophanthin after digitalis has been used. This would be better stated as follows: "If a patient has been digitalized and cardiac failure is still manifest, do not give strophanthin, for its action is identical and the latter will be tantamount to giving a toxic dose of the former."

An eighth error lies in the common practice of prescribing tincture of digitalis in drops instead of minims. Drops and minims are not synonymous. The patient uses the pure tincture and measures the dose with the medicine dropper. Depending upon the size of the opening and the thickness and gauge of the dropper, it would take from 20 to 25 drops to be equivalent to 10 minims. When giving tincture of digitalis it is always desirable that the patient use a graduated medicine glass or to use the special dropper which has been marked and checked by a measuring glass. The writer has repeatedly found failure of patients with heart disease to react to digitalis because of this error. When the dosage is properly measured, the results become satisfactory.

There is no need for the preparation known as infusion; it is inferior to the tincture and deteriorates so rapidly that its value is very questionable.

Spokane. F. E.

DIAGNOSTIC AND PROGNOSTIC AIDS IN NEPHRITIS

The editor asked Dr. Hench to write the article to be found on the first page in this number of Northwest Medicine. Dr. Hench originated this test, with the assistance of Miss Martha Aldrich, while working under Dr. Rowntree who has achieved such an enviable reputation all over the world for his renal functional, or phenolsulphonephthalein test—the best practical and simple every day test that any doctor can do in his office. The only unfortunate thing about the test is its name.

There are some cases, where it is of practical value to have an additional test, and especially one that has more prognostic value, in that it may point to great urgency for eliminative treatment by venesection, sweating and catharsis, because while a low renal 'thalein test is of bad prognostic import it does not so precisely indicate threatening uremia as a high urea finding in blood or saliva.

Dr. Hench is a very brilliant young assistant of Dr. Rowntree, and his salivary test is so simple and easily performed that it should prove of great clinical value to the general practitioner and deserves general recognition.

A few years ago when there was some controversy as to the comparative value of the phenolsulphonephthalein test we were fortunate enough to secure in this journal a paper by Dr. Rowntree on it and its value in nephritis compared with the quantitative blood test for urea, creatinin, etc.

Now it is not inappropriate to have another article on another valuable and simple test in nephritis by the most promising pupil of the distinguished Dr. Rowntree. K. W.

REPORTS OF SOCIETY MEETINGS

WASHINGTON STATE MEDICAL ASSOCIATION

MINUTES OF THE THIRTY-FIFTH ANNUAL MEETING OF WASHINGTON STATE MEDICAL ASSOCIATION, HELD AT BIG FOUR INN, BIG FOUR, WASH., AUG. 12-14, 1924.

(Concluded)

The Infant Welfare Committee of the State Medical Society wishes to make the following report:

Since making our report to the House of Delegates in September, 1923, the Infant Welfare Work of this State has progressed better than in any previous year. Clinics have been held by members of the profession in the following places: Walla Walla, Prosser, White Bluff, Yakima, Kelso, Longview, Bremerton, Tenino, Seattle (many clinics), Kennewick, Ostrander, Hanford, Deer Park, Spokane (many clinics), Snoqualmie Falls, Rainier, Kalama, Cle Elum, Sedro Wooley, Raymond, South Bend, Tacoma (many clinics), Granite Falls, Ellensburg, Connell and Shelton. Physicians, Dentists, Health Officers, Public Health Nurses and civilian women have helped remarkably with these clinics; Rotary Clubs, Kiwanis Clubs, Lions Clubs, Women's Clubs, Parent-Teachers Associations, and Anti-Tuberculosis Societies have all been sponsors for, and have helped remarkably in these clinics.

Posters are exhibited, many different forms of literature are distributed, motion pictures are displayed, and records are kept at these clinics. At some places short talks have been given by Doctors, Dentists and Nurses, covering subjects in which the laity are interested, such as goiter problems, the Schick test, tuberculosis, general care of the children, and feeding problems. From three to four thousand children including all ages up to seven years have been examined in these clinics throughout the State.

We have statistics showing, (a) the number of children found in need of medical attention, (b) the number not vaccinated, (c) the number needing dental attention, (d) the number needing tonsil and adenoid attention, (e) the number of badly nourished children, (f) the number of deformities found. I do not think it necessary to embody all of this material in this report.

The best organized clinic in the State is that held by Dr. E. J. Taggert at Bremerton. He has developed a very fine system of examination with fine blanks, and is making a resume of his findings each year. He is doing a very remarkable work in this community.

The Division of Child Hygiene of the State Health Department has conducted most of the clinics here reported in a very remarkable way. They have prepared fine blanks for getting histories and recording physical findings, and have developed a fine system of notifying the local doctor as to what was found with his patients, without creating any antagonism whatever. These blanks are available from the Health Department without charge, in conducting any of the clinics throughout the State. In that office they have also a large supply of literature for distribution.

The State Health office in cooperation with the University Extension Department of the State University have issued a correspondence study course in Hygiene of Maternity and Infancy. This is gotten up in a very fine way, and the enrollment throughout the State has been exceedingly large. The State Health office have also done a great deal in creating interest in the May Day project, which is a national affair, in regard to Infant Welfare Work.

The Infant Welfare Committee of the State Society formerly consisted of four men, Drs. H. L. Moon, J. R. Person, D. M. Dayton and your Chairman. This committee is still intact and is really the Executive Committee of a larger committee recently appointed. This new committee has been enlarged to include the following men:

Dr. T. H. Grosvenor, Chelan County	Wenatchee
Dr. E. C. Hackett, Cowlitz County	Kelso
Dr. O. R. Austin, Grays Harbor County	Aberdeen
Dr. H. L. Moon, King County	Seattle
Dr. Rush Banks, Lewis County	Centralia
Dr. L. M. Thompson, Lincoln County	Odessa
Dr. D. M. Dayton, Pierce County	Tacoma
Dr. N. L. Thompson, Snohomish County	Everett
Dr. P. D. McCornack, Spokane County	Spokane
Dr. J. W. Henderson, Stevens County	Colville
Dr. K. L. Partlow, Thurston County	Olympia
Dr. J. P. Kane, Walla Walla County	Walla Walla
Dr. P. A. Wiseman, Whitman County	Colfax
Dr. H. H. Skinner, Yakima County	Yakima
Dr. W. S. Bardwell, Pend O'Reille County,	Newport
Dr. E. M. Bevis, Okanogan County	Oroville
Dr. H. R. Bankard, Douglas County	Bridgeport
Dr. Munsey, Franklin County	Pasco
Dr. W. W. Day, Columbia County	**Dayton**
Dr. Robert R. Walton, Garfield County	Pomeroy
Dr. L. A. Spaulding, Benton County	Kennewick
Dr. R. D. Wiswall, Clark County	Vancouver
Dr. E. J. Taggert, Kitsap County	Bremerton
Dr. J. S. McElians, Asotin County	Asotin
Dr. G. F. Hilton, Ferry County	Republic
Dr. B. J. Ellis, Douglas County	Waterville
Dr. R. S. Weyer, Grant County	Ephrata
Dr. T. L. Burroughs, Adams County	Ritzville
Dr. C. R. Zener, Klickitat County	White Salmon
Dr. John Barbar, Skamania County	Stevenson
Dr. G. F. Pierrot, Wahkiakum County	Cathlamet
Dr. V. P. Capron, San Juan County	Friday Harbor

Dr. W. H. Taylor, Clallam County............Port Angeles
Dr. F. W. Anderson, Pacific County........South Bend
Dr. A. B. Cook, Skagit County........................Anacortes
Dr. J. P. Richardson, Kittitas County........Ellensburg
Dr. J. W. Goodheart, Whatcom County....Bellingham

This gives us a man in practically every County in the State, and he is considered the Chairman of that County in Infant Welfare Work, and can form a County Committee by himself if he desires. In this way we are trying to spread the Infant Welfare Work in the highways and byways of the State.

Each County Society in the State has been asked to give over one meeting this fall to the consideration of Infant Welfare Work. This will be presented in each Society by the County Chairman. The Child Hygiene Division has prepared a sort of answered questionnaire (copy attached) which will acquaint the members with the exact work being done by the State Department.

As many of you know, the Child Health Demonstration Committee of the American Child Health Association is establishing four health centers, throughout the United States—one is already located at Fargo, North Dakota, another in Rutherford County, Tennessee, and a third at Athens, Georgia; the fourth is undecided, but will be selected from some of the Rocky mountain states, including Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington Wyoming. Any city between 20,000 and 75,000 will be eligible. In order to be selected the community must show its sincerity in its desire to develop the Child Health plan for the community as a whole.

These demonstrations are worked out with the utmost care, and include anything that touches the matter of Child Health, the care of the expectant mother, safeguards for both mother and baby at all times, especially at child birth, and the follow up care to bring the new citizen safely through its most dangerous age. Then, a lot of stress will be laid upon the pre-school age, also the teaching of health games, development of health habits, and the correction of defects. The community must be responsible for a safe supply of milk, for wholesome living conditions, essential playgrounds and other important considerations. The national committee itself plays a leading part in the demonstration, and demand from the physicians in the community, nurses, teachers of public schools and parents of children, a real interest in the work.

Two cities in this State are working very hard for this Demonstration Center. The officers of the State Society and the Infant Welfare Committee are endeavoring to get this center located in this State, and from present indications it appears as though we would be likely to be successful in one of the two towns already competing. So far there is little opposition in other states.

It seems to the Chairman that the Infant Welfare Work of the State is progressing very rapidly, and that there will have to be some provision soon, made in the State Health Department for furthering this work especially as to conducting clinics. At present there is no financial arrangement for this, and very soon Dr. Turner's office will be swamped for applications, if the work continues.

DR. P. D. McCORNACK,
Chairman, Contact Committee.

KING COUNTY MEDICAL SOCIETY
SURGICAL SECTION

O. H. Christoffersen, Secretary
October 13, 1924

Case Presentation—End results with periarterial sympathectomies in two cases of Raynaud's disease by Dr. Christoffersen. Discussion by Drs. H. D. Dudley and H. J. Wyckoff.

Diagnosis and Treatment of Paralytic Ileus by Dr. James H. Berge. For the purpose of this paper, paralytic ileus will be considered as all non-mechanical obstructions of the bowel. The mortality of this condition is high—between 15 and 25 per cent—and recent statistics have shown that it occurs more frequently than formerly supposed, paralysis representing between 65 and 70 per cent of post-operative obstructions.

When we see a case of post-operative obstruction three things come immediately to mind:

1. Paralytic ileus.
2. Mechanical obstruction.
3. Peritonitis.

In differentiation among these we find the case history of primary importance.

First, as to the general strength of the patient and whether of the adhesive type as shown by some previous operation.

Second, as to the amount of starvation, purgation, and dehydration of the patient before he went to the operating table.

Third, the character of the operation—infected or clean, whether or no a wide exposure accompanied by much handling, traumatism and evisceration of the bowel was necessary.

Fourth, the post-operative condition, the amount of fluid retained by the patient (and when I say "amount of fluid," I mean the statement in terms of cubic centimeters per twenty-four hours, which is the only reliable check), the amount of vomiting and the characters of the vomitus, whether it began with clear fluid and gradually became fecal in character and whether it is expulsive or regurgitant in type.

Fifth, the character of the abdominal pain and the passage of the flatus.

Sixth, and last, we must consider the general appearance of the patient, the evidence of shock, the leucocyte count, and elevation of temperature.

The clear-cut case of paralytic ileus will show predominately the symptoms of shock with a pinched, anxious face, a cold clammy skin, a thready rapid pulse, and a rapidly falling blood pressure. Abdominal distention is marked and peristalsis absent. Vomiting is continuous—fecal in character and regurgitant in type. The history will show that the patient did well for some hours or days following operation, then gradually developed obstruction without signs of peristalsis as evidenced by the passage of flatus or fecal material. The blood count is only slightly elevated and the temperature may be subnormal.

A frank case of mechanical obstruction will also do well for a few days, but the developing obstruction is accompanied by more pain, and shock is not such a prominent feature. If seen early, peristalsis will be evident and some gas and fecal material may be expelled from below the obstruction. The vomiting may be fecal but will begin in an explosive manner while the leucocyte count will again only show a slight elevation.

General peritonitis will usually follow an infected case, will develop without a primary state of well being and will show a marked leucocytosis and a higher temperature.

The above are clear cut cases and we all recognize them but unfortunately they are not common. In the usual case all three blend in a manner that taxes our powers of diagnosis to the utmost. This is due to the fact that paralyzed quiescent gut is prone to infection and that infected gut is often obstructed by adhesions and angulations. The patient with peritonitis does not die of sepsis but dies of obstruction presenting the same picture as the case of obstruction whether mechanical or paralytic, the factor of absorption of toxin from the intestinal mucosa being much more in evidence than the absorption of septic products from the peritoneum. When the case is seen late or when infection is a known complication the differential diagnosis cannot be made and all must be treated as cases of obstruction.

If we knew the cause of paralytic ileus, we would have a great aid in diagnosis, but altho we know that systemic condition — pre-operative starvation and dehydration, and operative trauma and shock are contributing factors, and altho we have been told that it is due to a disturbance of innervation of the bowel wall, the site of trouble being the plexuses of Meissner and Aurbach, the sympathetic nervous system or the cord, we are about where we began and must confess our ignorance.

Thanks to Sweet and his co-workers, we now know why these patients die and how to attack the cause of death in the most logical manner. He has shown that the direct cause of death is the absorption of toxin produced in the paralyzed bowel and formed as an end product of protein disintegration. This toxin is being produced in the duodenum and is extremely powerful—one-tenth gram of it being sufficient to kill a fifteen-pound dog in a few hours—the animal dying with classic symptoms of intestinal obstruction. Its chemical nature has not been fully established but it is known that protein disintegration, pancreatic secretin and bacterial action are necessary for its formation. Also that it is present in normal bowel but not absorbed, but is absorbed under the conditions which obtain in ileus, the duodenum being the zone of maximum toxicity, and the poisonous material being developed further down in the intestine.

Again, it has been shown that in ileus the intestinal mucosa takes on a secretory function in place of an absorptive and excretes fluid into the bowel. This, coupled with vomiting, causes the loss of an immense amount of fluid and a marked increase in blood nitrogen, which toxic material is excreted into the intestinal lumen, existing there in higher concentration than in the blood. Thus, if this is not drained out on relief of the obstruction it will be reabsorbed by the lower bowel and colon, adding to the already existing toxemia. The whole question resolves itself into one of dehydration and toxemia. It is the most common clinical example of death from thirst.

The usual treatment of paralytic ileus is one of the most unsatisfactory forms of therapy. Oral medication is obviously unsound due to the small likelihood of the therapeutic agent being retained in the stomach long enough to permit of its passage into the intestines. And even though retained the intestinal mucous membrance cannot be expected to behave toward the drug in a normal manner. Local external measures such as stupes are seldom of themselves effectual. We are therefore forced to depend on substances which can be given by hypodermic and altho pituitrin, eserine, and a few others sometimes give results, we cannot put complete reliance on any of them. Gastric lavage is one of our greatest aids, acting by the direct removal of toxins which are formed in the duodenum and regurgitated into the stomach thru a dilated pyloris. Another valuable adjunct to treatment is saline infusion, preferably given by hypodermoclysis which dilutes toxins and inhibits their formation, as I have shown that they are formed only in the presence of dehydration. Enemata of various kinds are used, sometimes with effect. To sum it up—the usual medical treatment consists of gastric lavage, saline and glucose infusion, morphine, drugs given by hypodermic to increase peristalsis, and enemata.

Recently Hughson and Scarff of John Hopkins while working on the nature of the toxin produced in high intestinal obstruction, noted that in using hypertonic salt solution intravenously marked peristalsis of the entire intestinal tract was produced. It was tried on two cases, both of which had received all the usual forms of medication without avail, and in both caused prompt and active peristalsis. Clinical application of the method has so far been very small, but I think it is well worth a trial and if it proves as successful as experiments indicate, it will be a distinct advance in the treatment of paralytic ileus.

Under medical treatment most patients will recover, but the chief mistake is in waiting too long in hopes that the obstruction will clear up, for we know that most adhesions causing obstruction will disappear of themselves in about eight days. But this does not alter the fact that in a certain number of cases surgery is definitely indicated.

There is no question as to the procedure to follow, namely—a high enterostomy preferably in the lower jejunum. Oftentimes we find surgeons operating thru the old incision, when doing an enterostomy following an appendiceal or pelvic operation, finding little or no drainage from the tube and no benefit from the operation. The reason for this is the site of the enterostomy. The intestine of paresis can be divided into three parts:

1. The lower containing gas.
2. The middle containing gas and toxic fluid.
3. The upper containing toxic fluid.

So if one would attack the chief zone of toxicity and secure adequate drainage, the tube must be placed in the upper segment.

In conclusion, I wish to emphasize the following points:

1. Oftentimes the differential diagnosis between paralytic ileus, mechanical obstruction, and peritonitis cannot be made, and the case must be treated as one of obstruction.

2. Death in ileus is due to toxemia, the toxin being developed in the duodenum and most actively absorbed from the jejuneum. Drainage of this toxic fluid is essential to recovery.

3. Surgical measures must not be too long delayed whether the obstruction is paralytic or mechanical. Medical treatment should not be continued beyond the third day.

4. Surgical intervention consists of a high enterostomy done in a manner least conducive to shock.

Discussion was opened by Dr. Park Weed Willis who stated that he was doubtful of the real existence of a true paralytic ileus and the question is how often does it occur. The treatment demands plenty of fluids, as saline, glucose per rectum, and frequent washing of stomach. Relieve the obstruction, if necessary, otherwise hesitate about opening the abdominal wall. Ochner's method of treatment for 4 to 5 days with general peritonitis will get purging results later.

Dr. Hagyard: The supreme test of a surgeon's ability are these post-operative distentions with emesis. If one understands the true pathology he will not give pituitrin, eserin, etc. The stethoscope to the abdomen is of direct assistance, advocates the early enterostomy if the patient is becoming worse. Enema once per day is quite sufficient; cathartics are harmful.

Dr. R. D. Forbes: Ileus is the commonest complication of abdominal operation and is difficult of a true diagnosis. Indications for an enterostomy are fecal vomiting, distentions, cyanosis and cold extremities. Pituitrin given at the same time with physostigmin will allow complete evacuation. Patient should be given 3,000 c.c. of fluid per day.

Dr. Berge concluded the discussion.

Denucé's Method of Reduction of Congenital Dislocation of the Hip with Report of Cases, by Dr. H. E. Coe.

Dr. Murray noted the ease and success of the manipulation in the Adam's Clinic two months ago. He emphasized the fact that the earlier the age the better prognosis of good results.

Dr. Roger Anderson stated that the manipulation of placing the head in the acetabulum is but 50 per cent; the remainder being, keeping same in place and allowing good functional results. Immediate x-ray is indicated in all instances.

Dr. Wyckoff believes that the least trauma to ligaments is very important in contrast to the older methods where tearing of the ligaments was frequent.

Dr. Coe concluded the discussion.

There were 54 members present.

O. H. CHRISTOFFERSEN,
Secretary.

KING COUNTY MEDICAL SOCIETY

Surgical Section

November 10, 1924.

Dr. A. C. Loe presiding.

Case Presentation—Linitis Plastica, by Dr. W. S. Griswold.

Female, age 28, taken ill several months previous with symptoms of indigestion, followed by attacks of vomiting which gradually cleared up. Later developed peritonitis and intestional obstruction with resultant exit. Diagnosis of the above was confirmed by autopsy which revealed involvement of the stomach, bowel, appendix and extension into the lymphatics. Dr. Griswold then classified the disease with a complete resume of the literature to date.

Case Presentation—Osteo-sarcoma of Femur, by Dr. R. L. Mosiman.

Dr. Mosiman presented the case history of a rapidly growing tumor in eye of child with resultant amputation and pathologic findings of osteo-sarcoma of the femur. Amputation done three years ago with the child to date in good health.

Discussion by Drs. Sharples, Loe, Dawson and Roger Anderson.

Physics of the Deformities of Rickets—by Dr. C. W. Sharples.

Dr. Sharples gave a very concise and illustrative lantern lecture on the physics of deformities of bone in rickets. He first gave a brief resume of the detailed pathology; following this slides of the various types of deformities occurring in the long bones. He stressed the following points, natural curves in normal bones are exaggerated in rickets; centers of ossification are poorly formed; weight of body on the spongy mass of expanded extremity will cause a spreading out of same; muscles tone or pull will exaggerate deformity; in the third stage of rickets one will find a splinting of the bones on the concave margin due to deposits of organic material here. The treatment should be begun early, so that operative fracture is unnecessary.

Discussion was opened by Dr. R. L. Jeffery, who advised against the early operation but only in the acute curvatures.

Dr. Roger Anderson cautioned an accurate diagnosis, with careful differentiation from Bow Legs or "Foot Troubles." In doing an osteotomy always use extension to counteract muscle tone.

Dr. Sharples closed the discussion.

There were 44 present.

O. H. CHRISTOFFERSEN, Secretary.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of the Pierce County Medical Society was held in its rooms October 28, 1924. Called to order by the president, Dr. S. M. MacLean. Minutes of the previous meeting read and approved.

PROGRAM

Dr. J. W. Snoke presented a paper on dementia praecox which was an exhaustive review of the subject, including case reports. In the discussion following, Dr. David Livingston stated that 28 per cent of admissions at Steilacoom within the last two years had been dementia praecox cases and that the expense within the United States for the care of these cases amounted to $25,000,000 annually. He also brot up the horse serum injections in the spinal canal as being a late method of treatment.

Dr. L. M. Wilbur emphasized the value of intelligent supervision now given by several states in helping the patient back to normal with occupational therapy.

Dr. Rae thot praecox was a behavior disorder rather than a disease.

Dr. J. I. McKelway stated that 68 per cent of praecox cases on admission were between the ages of 20 and 34.

Dr. Eaton discussed heredity and the endocrine system from the standpoint of etiology.

Dr. Snoke closed the discussion.

Dr. E. D. McCarty gave recent advances in roentgenology, based on a recent trip thruout eastern medical centers, the outstanding features of which were the treatment of x-ray lesions, which was being done principally by removal and grafting, the origin and nomenclature of neoplasms and recent improvements in technic. In discussion, Dr. Fishel described the improved flat Buckey diaphragm and the new Cooledge tube, water cooled, which gives better bone detail.

The health officer gave a report on the poliomyelitis situation, with statistics.

Mr. R. O. Jones, executive secretary of the Public Health League, discussed the legislative situation, and plans were formulated for action in Pierce County.

C. F. ENGLE, Secretary Pro Tem.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

The regular monthly meeting of the Puget Sound Academy of Ophthalmology and Oto-Laryngology was held in Tacoma, November 18, 1924, at the St. Helen's Clinic. A clinical program was presented by the Tacoma members of the Academy.

Dr. J. S. Davies presented four cases. The first a man 38 years of age for whom he performed a plastic restoration of the orbit. The right eye had been enucleated 30 years ago and at the time the man was first seen by Dr. Davies, the orbit was filled with scar tissue and the tear sac infected. The tear sac was removed under local anesthesia and then the plastic operation was performed. The scar tissue was removed from the orbit down to the bone. Then a plate made of dental wax was inserted and a skin graft used from the thigh. The lids were brot togehter and covered by a tight dressing. The dressing was allowed to remain four weeks, so tight that no movement of the lids was possible. An excellent result was obtained so that the patient wears a full sized prothesis.

The second case was a young man who was in a mine explosion four months ago. A piece of copper penetrated the inner side of the cornea, perforated the iris and was shown by the x-ray, embedded in the lens. The eyes being especially tolerant to copper, it was allowed to remain. His tonsils were removed, teeth x-rayed and three removed. After having been inflamed for three months the eye quieted down and is now entirely quiet, showing an opaque lens.

Dr. Davies' third case was a girl of 5 years, whose left pupil has been dilated since having chickenpox three weeks ago. She reads with a plus 2 lens. It was a toxic unilateral paresis of accommodation.

His fourth case was a boy who has had poor vision for three years; nystagmus; general health good and general physical examination was negative, no symptoms of endocrine disturbances, x-ray showed an enlargement of the sella turcica and degeneration of the pituitary. Both eyes showed macular choroiditis.

The cases were discussed by Drs. Pontius, Hoffman and Hillis.

Two cases were presented by Dr. W. G. Cameron. A girl, age 16, noticed the loss of part of the visual field of her left eye months ago. Vision then was 6/18 in left eye, 3/5 in right eye, and the fundus showed some folds in the lower part of the retina. Urinalysis showed albumin and casts, and since then she has been under an internist's care. At the present time vision in left eye is 6/60 and there is definite retinal separation due to exudate.

The other case shown by Dr. Cameron was a man 51 years of age with proptosis of his right eye. In 1900 he suddenly became blind in the left eye, and then ten years later had sudden pain in it and was enucleated. One year ago he became greatly exhausted after running for a train, with weak pulse, headache. His eyelids were swollen the following day, but recovered with the application of cold packs. Following this the right eyeball has gradually become more and more prominent. The eyeball is larger than normal and is pushed out from the inner canthus. Vision 6/15. The nerve head shows neuritis. The eye cannot be turned inward past the mid line. Tumor can be palpated and has a soft, rubbery feeling. No pulsation. Considered by Dr. Cameron to be a tumor of vascular origin. General examination was negative.

Dr. Cameron's cases were discussed by Dr. Pontius, who compared the orbital tumor to a similar case seen by him which was a form of leukemia.

Dr. D. H. Bell showed a man who had a definitely defined semi-circular infiltration of the deep layers of the left cornea. Both the nebula and the accompanying ciliary inflammation have improved by daily treatments with ultra violet light and atropine.

Dr. A. W. Howe presented a case of keratitis disciformis. The patient had a definite gray disc which occupied the center of the cornea definitely separated from its transparent margin. In the center of this disc is a deeper gray spot. The condition has greatly improved since Dr. Howe began treatment, one year ago. He has used K I internally, and yellow oxide of mercury locally.

Another case presented by Dr. Howe was a girl 23 years of age, whom he saw first one month ago. She gave a history of having had drainage of mucus and pus from naco-pharynx for two years. Her sister has had antiluetic treatment, having had plus 2 blood Wassermann. Father died at age of 50 years from tuberculosis. She has a whitish collection of mucus on the posterior wall of the naso-pharynx covering a round crater-like ulcer with a clean base that does not bleed readily. Wassermann is negative as is general physical examination. Treatment has been antiluetic and topical application of silver nitrate.

Discussion of these two cases was opened by Dr. Chase and continued by Drs. Clark, Klemptner, Cameron, Wanamaker.

Dr. A. E. Hillis presented a man 68 years of age who had enucleation of left eye for sarcoma of the choroid after failing vision for one year. Six months ago his left nostril became blocked by a tumor of the septum about one-fourth inch thick. Radium was applied alongside of the tumor without effect, then radium needles were inserted into the tumor. At present the nostril shows an ulcer of the septum, the mucosa and part of the cartilage having sloughed with the tumor. Laboratory diagnosis of the tumor of the eye was small round cell sarcoma of the choroid.

The regular order of business was continued to the next regular meeting.

MORRILL J. MORRIS, Secretary.

HOSPITAL STANDARDIZATION

A DEPARTMENT OF ANESTHESIA

Practically all of the large Eastern hospitals have created the Department of Anesthesia as a solution of the anesthetic problem in the hospital. All of us remember when, altho an anesthetic was necessary for the performance of an operation, yet it was not necessarily administered by an expert. Gradually the expert anesthetist, after having given many hundred anesthetics, has come upon the field. We all remember the Sister at Mercy Hospital in Chicago who gave anesthetics for Dr. Murphy, and Dr. Murphy's pride in her work. She was one of the first experts in anesthesia who was not a graduate in medicine. The advent of the nurse in the Department of Anesthesia came at about the same time that many medical men began to devote their entire time to anesthesia as a specialty. It was but natural that a conflict should develop between the nurse anesthetists and the regular physician.

The Young Physician: For many years the young graduate in medicine entered the surgery as an anesthetist, then as assistant, and finally began to do his own surgery in a very capable manner. The interneships in the modern hospitals have made a short-cut in this particular route to the surgical field. Today the interne is taught surgery without being trained in anesthesia because the Department of Anesthesia and the expert anesthetist have assumed control of the anesthetic in surgical operations.

It is not the purpose of this paper to discuss the relative values of the two procedures, but only to call attention to the fact that the present day interne does not receive, as a rule, intelligent training in anesthesia so that the surgeons of today do not dare trust the anesthesia of their cases to the young graduate. They turn to the expert in anesthesia in all their difficult cases and only give an occasional simple anesthesia to the young graduate. While this is true in anesthesia the same holds true in other fields of activity. The commercial and professional laboratories, with their trained technicians, have taken from the young graduate that type of work which formerly helped him to pay expenses. Specialization in medicine has robbed the young practitioner of many of the minor surgical procedures, such as circumcisms, tonsillectomies and in other operations which formerly were done by the young graduates. Industrial surgery has developed to such a point that the young men receive very little experience in that type of work. Older men who understand the workings of the State law cater to that sort of practice and so here again specialties are being developed.

The argument advanced by the expert anesthetists that they are saving this field of medicine for the young graduate can hardly be considered a valid reason for not progressing in this particular line. The value of a Department of Anesthesia depends, of course, upon the following factors: (1) Does the patient secure better anesthesia? (2) Is the surgeon relieved of any part of his responsibility? (3) Is the hospital safeguarded in its duty toward the patient and the physician and its own trustees? If these three questions cannot be answered in the affirmative a Department of Anesthesia is not to be considered—if they can be answered in the affirmative a Department of Anesthesia is imperative.

These columns are open to discussions from the standpoint of the hospital, the surgeon and the expert anesthetist. We have no fixed ideas on this subject, only a wish to be a benefit to all three of the factors directly interested in the solution of this problem. It is a step that has been taken in the Eastern hospitals and must sooner or later be decided in the West.

Seattle. G. W. S.

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BOOK REVIEWS

Edited by KENELM WINSLOW, M.D.

Principles of Bacteriology. By Arthur A. Eisenberg, A.M., M.D. Director of Laboratories, St. John's Hospital, Pathologist to Lakewood Hospital, Cleveland, etc. Cloth 214 pp. Second Edition, C. V. Mosby Co., St. Louis. $2.95.

According to the preface, this volume had its origin in the author's course of lectures to nurses in various hospitals of Cleveland, Ohio.

Having had somewhat extensive experience in the same line of instruction, your reviewer looks upon this work with a kindly eye. Only one who has passed through the mental throes of imparting bacteriological data to the eager, tho often inept, mind of the undergraduate nurse, can appreciate how admirably the author has adapted the arrangement and phraseology of his subject, to the needs and requirements of his proposed audience. The author says enough without saying too much which is a rare gift. In order, progressive sequence, the subject is laid before the reader, without being obscured by either brevity or verbosity. For anyone beginning the study of bacteriology, or for others who desire a terse refreshment of memory on the subject, it is a very desirable book.

West.

Blood Chemistry Colorimetric Methods. For the General Practitioner. By Willard J. Stone, M.D. Introduction by George Dock, M.D. Cloth, 75 Pp. Paul B. Hoeber, New York, $2.25.

Probably the most enlightening review of this work, would be, briefly to state that with this book and the necessary reagents, any general practitioner of medicine can lock himself in the secrecy and privacy of his own laboratory, and emerge therefrom competent reliably to perform the common examinations of blood chemistry, outlined in this volume. It might be necessary that this physician take into his laboratory with him a little food and, possibly, a cot in order that he should emerge "competent," but if he followed the simple directions outlined in this book, and repeated his examinations until he accumulated experience, he surely would become proficient. Evidently the book is written by one who performs as well as writes. From the reliable methods of examination he has selected those which are simplest and best adapted to the person with limited equipment and the various slips are outlined with a clarity that is pleasurable.

Nor does the usefulness of the work end with the technical detail. Appended to the description of each examinations is the clinical significance of the possible findings. This with the tables of neutral alkali and acid-forming foods, the dietary tables in diabetes of Joslin, the dietary control of disturbances of metabolism, render the book very valuable to the clinicians as well.

West.

Developmental Anatomy. A Text Book and Laboratory Manual of Embryology. By Leslie B. Arey, Professor of Anatomy at the Northwestern University Medical School, Chicago. Octavo volume of 433 pages, with 419 illustrations, many in color. Philadelphia and London, W. B. Saunders Company, 1924. Cloth, $5.50 net.

This book is intended primarily as a text for students, and for this purpose it is excellent. The general arrangement is logical and enables a beginner to obtain a rather definite idea of the time and sequence of embryological development, which cannot be said of many works on this subject. As a reference book the practitioner will find the matter in which he is interested, easy to find, and the outstanding facts as proven are definitely stated in concise wording, uncluttered by paragraphs of supposition, and of argument for and against theories of development, anatomic possibilities, etc. By omitting the physiological and adhering strictly to the anatomical, features of embryology, the author is able to avoid many controversial points.

The paragraph in each chapter, dealing with anomalies of the structure,, development of which is described in tha tchapter, is very valuable in enabling the practitioner to better understand these pathological conditions when confronted by them. In it are described the anomalies which may occur in each organ or structure and the causes of these one traced as far back as possible in the present state of knowledge.

While in general context the book bears some resemblance to the older Prentiss text, the book is strictly modern. The illustrations are good, and of great value in following the developmental sequence.

Cefalu.

Human Constitution. A Consideration of Its Relationship to Disease. By George Draper, M.D., Associate in Medicine at Columbia University, New York City. Octavo of 345 pages witn 208 illustrations and 105 tables. Philadelphia and London, W. B. Saunders Company, 1924. Cloth, $7.50 net.

This is an important, new and very interesting investigation by Draper at the Constitution Clinic of the Presbyterian Hospital in New York.

We have rather neglected the old established influence of constitution or diathesis on disease. Probably because many so called constitutional diseases, as rheumatism, diabetes and gout, have been shown to be the result directly or indirectly of bacteria. Now in our newer knowledge of heredity and the effects of endocrines the matter of consitution has again come to the fore, and the pendulum is swinging the other way.

Constitution is displayed by the individual through his inherited characters plus his environment. Draper picturesquely considers the constitution as a screen made of four panels on which is painted the picture of personality. These four panels are represented by anatomy, physiology, psychology and immunity. There are given copies of very elaborate examination blanks used in the determination of the individual's make up or morphology in each of these

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four panels, or chief parts in the architecture of this constitution.

The greater part of the book is taken up with elaborate measurements of all parts of the body by various forms of instruments forming the science of anthropometric examination.

The author believes that the coordinated results of these anthropometric examinations or measurements will have a value in clinical diagnosis and, therefore, he studies in this way six diseases in 298 individuals of both sexes. These disorders include gall bladder trouble, duodenal and gastric ulcer, pernicious anemia, asthma, nephritis and high blood tension, and tuberculosis.

Merely to note some of the more salient points; Gall bladder disease occurs more often in the broad or 'sthenic build, and ulcer in the long or asthenic type of persons. In weight, ulcer and gall bladder patients are at the opposite end of the scales. The chest measure is greater in gall bladder subjects than in any other. Every part of the body is subjected to the most minute measurements and scrutiny, the color of the hair and eyes, the length of the eyes and finger nails, and so on through every part of the anatomy. All this matter is collected in the most elaborate tables occupying alone over 100 pages.

The average reader need not be confused by this complexity as the writer is very clear and convincing in his general remarks. The doctor has too long studied disease and neglected the patient. He cannot see the woods for the trees. The writer says we study the body as if we were to study an automobile by scattering the separate parts far and wide and were to learn all there is to know about each bolt and nut, but nothing about the whole and perfect machine.

This book emphasizes that the human being is as worthy of consideration by the doctor as are his diseases, and points out a new method of approach to the study of constitution. While persons with certain panels do not necessarily have certain diseases, the capacity of an individual to react to bacterial or other menaces is just as specific as the color of his hair, his size, conformation, functions or psyche. This is the first of a number of contributions to be made by the author, and is extremely engrossing, suggestive and stimulating.

Winslow.

Abt's Pediatrics. By 150 specialists. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totaling 8000 pages with 1500 illustrations, and separate index volume free. Now ready—Volume IV containing 1271 pages with 271 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 per volume. Sold by subscription.

Like the preceding volumes of this work, the present one is encyclopedic in character. It is not always clinical in scope, but contains an enormous amount of material of great interest to the clinician, as well as discussions of a purely physiological character. Its heterogeneous authorship is abundantly manifested by the diversity of treatment of material in the various chapters. As examples—the section on Mongolian Idiocy is a brief description that would barely cover the needs of one seeking meagre information, while the chapter on the urine in infancy and childhood is a most exhaustive monograph.

Volume IV concludes presentation of chapters on diseases of the lungs and thorax, including the surgery of the thorax. Sections on heart, blood and vascular system follow, together with discussions of the physiology of the circulation and physiology of the blood. The chapters on physical examination of the heart in children, congenital heart malformations, and electrocardiography in children are particularly complete. Ductless glands disorders are adequately presented. The urine, and kidney, bladder and genital disturbances comprise the subject matter of the later chapters of the book. Bibliography is found following most of the sections.

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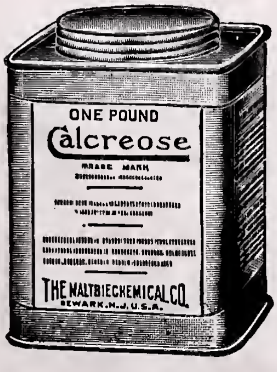

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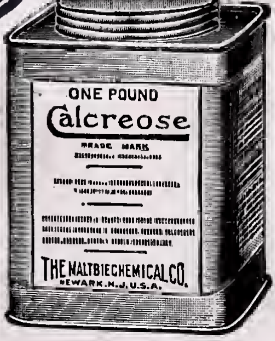

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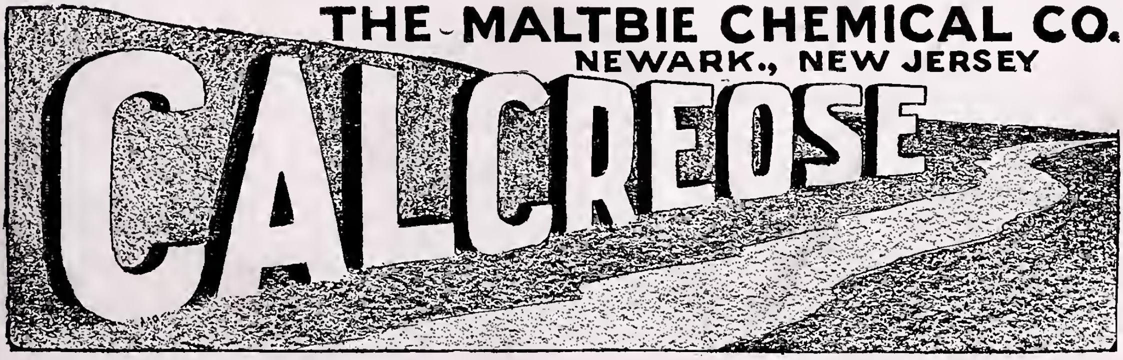

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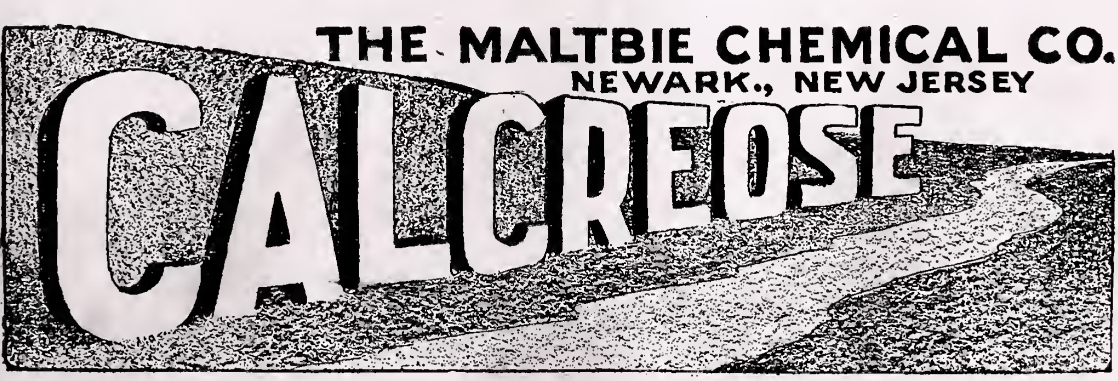

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"CALCIUM—Certain it is that patients, especially children, often improve with increased amounts of calcium in their food or as a medicament."

"CREOSOTE—It seems to be true that many patients have improved appetite under its stimulant or irritant action in the stomach. It may also for a time improve digestion, and the patient often adds weight. During this period there is frequently a lessening of the bronchitis, and, therefore, a decreased expectoration, and with this decrease of the secondary (streptococcic) infection, there is likely to be less fever and, therefore, less sweating." A. M. A.: *Handbook of Therapy*, Ed. 6, p. 201.

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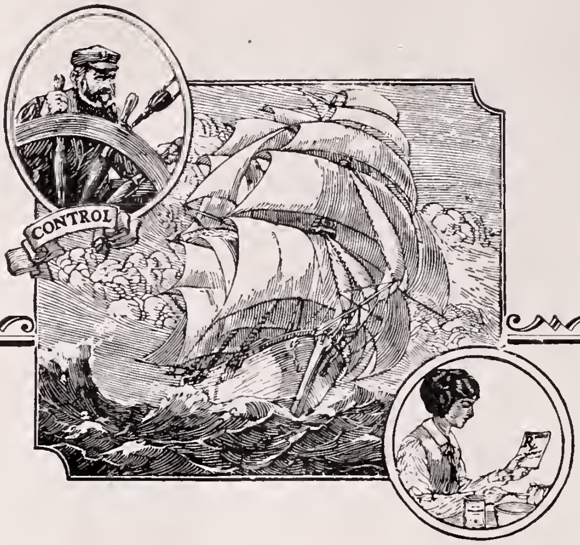

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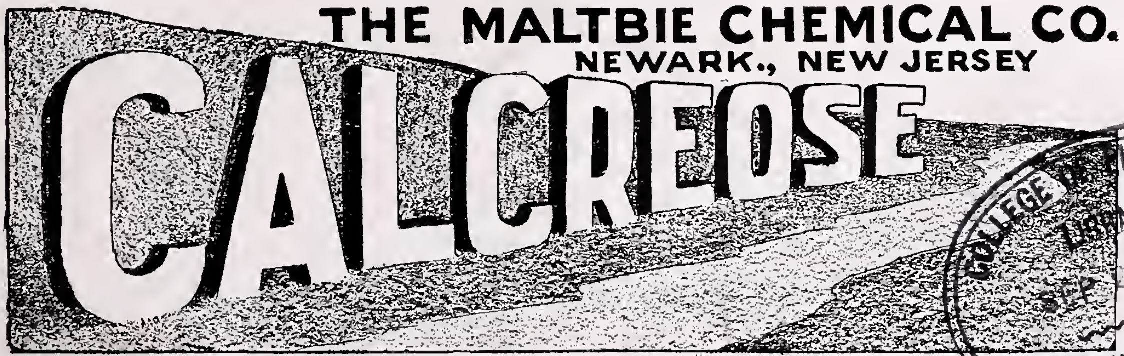

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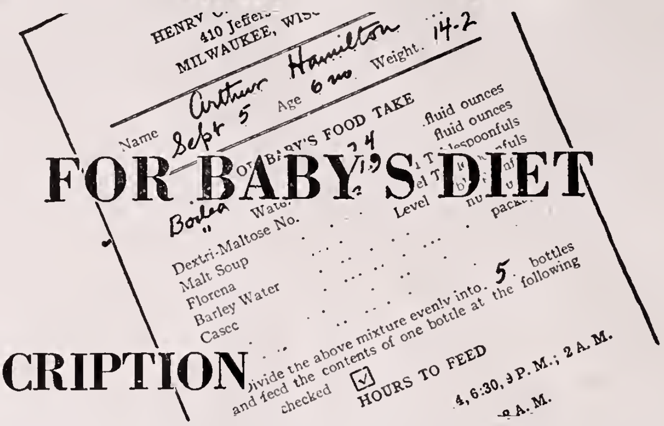

HENRY
410 Jeffers
MILWAUKEE, WIS

Name Arthur Hamilton
Sept 5 Age 6 mo Weight 14-2
BABY'S FOOD TAKE
fluid ounces
fluid ounces
tablespoonfuls
Boiled Water
Level
packages
Dextri-Maltose No.
Malt Soup
Florena
Barley Water
Casec
Divide the above mixture evenly into 5 bottles and feed the contents of one bottle at the following checked ☑ HOURS TO FEED
4, 6:30, 9 P. M.; 2 A. M.
A. M.

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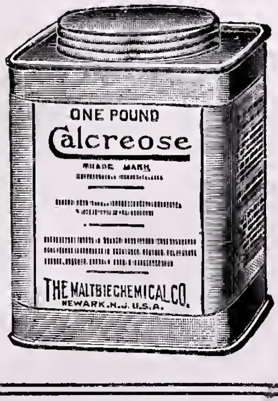
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